

Alexandre M. Bayen

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Professor, Department of Civil and Environmental Engineering
Director, Institute for Transportation Studies
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Affiliations Institute for Transportation Studies (ITS)
Center for Information Technology and Research in the Interest of Society (CITRIS)
Lawrence Berkeley National Laboratory (LBNL)
Berkeley Artificial Intelligence Research (BAIR)

EDUCATION

Stanford University, Stanford, California

Ph.D. in Aeronautics and Astronautics, Jan. 2004

Dissertation title: *Computational control of networks of dynamical systems: application to the National Airspace System*

Stanford University, Stanford, California

M.S. in Aeronautics and Astronautics, June 1999

M.S. Project title: *Stability analysis of a trailing vortex*

Ecole Polytechnique, France

Eng. Deg. in Applied Mathematics, July 1998

AWARDS

Best Paper Award, UBICOMM 2015	2015
Liao-Cho Innovation Endowed Chair	2015
EECS Distinguished Teaching Award, EECS Department, UC Berkeley	2015
Walter L. Huber Civil Engineering Research Prize, ASCE	2014
Chancellor Professor, UC Berkeley	2014
Antonio Ruberti Young Researcher Prize, IEEE	2013
Okawa Foundation Research Award	2013
Best Application Paper Award, 9 th IEEE CASE Conference	2013
Presidential Early Career Award for Scientists and Engineers (PECASE), The White House	2010
NASA Top 10 Innovators in Water Sustainability (Launch 2010)	2010
TRANNY Award, California Department of Transportation	2009
CAREER Award, National Science Foundation	2009
Best of ITS Award, citation for “Best Innovating Practice”, 15th World Congress on ITS	2008
Clean Technology Innovation Prize, Berkeley Center for Entrepreneurship & Technology	2008
William F. Ballhaus Prize for Outstanding Doctoral Dissertation, Stanford University	2004

HONORS

NAE Gilbreth Lecture	2017
NAE China-America Frontiers of Engineering session organizer, China	2017
Excellent Reviewer, <i>Journal of Guidance, Control, and Dynamics</i> (JGCD)	2016
NAE EU-US Frontiers of Engineering speaker, Helsinki, Finland	2016
NAE EU-US Frontiers of Engineering speaker, Chantilly, France	2013
IBM Shared University Award	2012
Google Faculty Research Award	2012
Finalist, Best Student Paper Award (as advisor), IEEE Conference on Decision and Control	2010

NAE Frontiers of Engineering participant	2008
Outstanding Automatica Reviewer	2003
Graduate Fellow of the Delegation Generale pour l'Armement, France	1998 - 2002
Medaille de la Defense Nationale as a Second Lieutenant, Landau in der Pfalz, Germany	1996
Three Letters of Commendation as a Second Lieutenant, France	1996, 1997, 1998

ACADEMIC EXPERIENCE

Director , Transportation Center, Lawrence Berkeley National Laboratory	Feb. 2015 - Onward
Faculty Scientist , Mechanical Engineering, Lawrence Berkeley National Laboratory	Feb. 2015 - Onward
Director , Institute for Transportation Studies, UC Berkeley	Jul. 2014 - Onward
Professor , (50% appt.) Electrical Engineering and Computer Science, UC Berkeley	Jul. 2014 - Onward
Professor , (50% appt.) Civil and Environmental Engineering, UC Berkeley	Jul. 2014 - Onward
Associate Professor , (50% appt.) Electrical Engineering and Computer Science, UC Berkeley	Jul. 2011 - July 2014
Associate Professor , (50% appt.) Civil and Environmental Engineering, UC Berkeley	Jul. 2011 - July 2014
Associate Professor , (100% appt.) Civil and Environmental Engineering, UC Berkeley	Jul. 2010 - Jul. 2011
Assistant Professor , (100% appt.) Civil and Environmental Engineering, UC Berkeley	Mar. 2005 - Jul. 2010
Visiting Scientist , NASA Ames Research Center	Jan. 2001 - Dec. 2003
Research Assistant , Aeronautics and Astronautics, Stanford University	Sept. 1998 - Dec. 2003

VISITING PROFESSORSHIPS

Nanyang Technological University (NTU), Singapore , Electrical and Electronic Engineering Performing research in the area of intelligent buildings	Jan. 2012 - Jan. 2014
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MAJOR PROJECTS

Principal Investigator , <i>NestSense</i>	Sept. 2014 - Onward
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Budget to date: ~500K.

Team: 8 (1 PhD, 5 MEng, 1 staff, 1 nurse, 1 occupational therapist).

The goal of this project is to complete prototyping of the hardware ecosystem for in-home monitoring of patients with Alzheimer's disease (AD), to begin data collection with subjects, and to test novel algorithms based on this data. The hardware ecosystem consists of a combination of cameras, Android Wear smartwatches, Android phones, and bluetooth in-home sensors. Data collection will be achieved through a collaboration between clinicians at UCSF, UC Davis and a group of the EECS department at UC Berkeley.

Principal Investigator , <i>Connected Corridors project</i>	Sept. 2011 - Onward
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Budget to date: ~\$21M.

Team: 50 researchers, engineers and administrative staff at its peak.

In charge of building and leading a team composed of faculty (co-investigators), post doctoral and staff researchers, Ph.D., M.S. and B.S. students, software engineers, policy analysts, and administrative staff. The ICM project will prototype, test and deploy a pilot architecture for control of a corridor in California, comprising highways, arterial streets and at least one public transit system. The team will build a backend system to control traffic flow through use of traffic lights, ramp metering lights and variable speed limits. The team will develop a smartphone app to incentivize the public to change their commute patterns (mode / route / time of departure) based on social networks and rewards for good behavior. Co-investigators include Profs. Horowitz (ME), Kanafani (CEE), Varaiya (EECS), Walker (CEE), Work (CEE) and Zhang (CEE).

Principal Investigator , <i>Mobile Millennium project</i>	Jan. 2008 - Sep. 2011
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Budget: >~ \$5M.

Team: 25 researchers, engineers and administrative staff.

The *Mobile Millennium* project was the first traffic app and backend system deployed by Nokia (jointly with UC Berkeley) to gather traffic information from GPS enabled smartphones to reconstruct traffic information in real-time from streaming data. Nicknamed *Mobile Century*, a prototype system was tested on Feb. 8, 2008 on I80 for 10 hours, on 100 vehicles showcasing the first ever reconstruction of traffic from GPS data only. Subsequently, a field operational test, *Mobile Millennium*, led and operated by UC Berkeley, was launched to test the system at the scale of California, and has been running to this day, gathering more than 60 million GPS points a day, which are fused with loop, radar and bluetooth data. The system is now used by the State of California for procurement, to assess the quality of probe data to be acquired by California.

Principal Investigator, *Floating Sensor Network project*

Jan. 2006 - Sep 2015

Budget: \$2M.

Team: 10 researchers and students.

The *Floating Sensor Network* is the first semi-autonomous fleet of 100 robots based on Android smartphones built to broadcast parameters measured in rivers and estuarine environments to a backend system used for data fusion. The 100 robots have dual motors, diving capabilities, and sensor platforms capable of measuring depth, salinity, temperature and currents. The backend system fuses the streaming Lagrangian data into high fidelity hydrodynamic models for real-time nowcast and forecast of the currents, on 500 nodes of the NERSC computer cluster at LBNL.

Co-investigator, *NextGen Air Traffic Management System*

Jan. 2005 - Feb. 2008

Budget: \$2M.

Team: 3 students.

This project focused on network optimization of the National Airspace System (NAS) in the US. Over three years, I developed a NAS-wide network routing model and optimization framework to mitigate congestion in the en-route airspace, and was implemented to work ETMS/ASDI datastreams jointly with NASA Ames. Co investigators include Profs. Hansen (CEE), Sastry (EECS) and Tomlin (EECS).

GOVERNMENT EXPERIENCE

Major, Research Director, Autonomous Navigation Laboratory

Jan. 2004 - Mar. 2005

Délégation Générale pour l'Armement, Ministère de la Défense, Vernon, France

In charge of a laboratory of 18 researchers focused on building UAVs with off the shelf components. In charge of procurement of UAV technology for the Navy and the Air Force.

First Lieutenant, Ecole Polytechnique, Palaiseau, France

Sept. 1996 - Sept. 1998

Engineering training.

Second Lieutenant, 6th Maintenance Unit Regiment

Sept. 1995 - Sept. 1996

Active duty. French Forces in Germany, Landau in der Pfalz, Germany

INDUSTRY EXPERIENCE

Consultant

Oliver Wyman

2016 - 2017

Planning for autonomous mobility solutions and infrastructure development for next generations cities

Kayrros

2016

Identification of data sources and methodologies for VMT accounting at various spatio-temporal scales

Nokia

January 2012 - September 2012

Development of IP related to location based services (transportation, health, mobility)

BAE Systems

October 2010 - December 2011

Development of a tracking system for UAV-based reconstruction of ground traffic

NAVTEQ

June 2009 - December 2010

Development of traffic flow estimation tools for next generation probe-based monitoring systems.

Expert witness experience

Google vs. Traffic Information LLC

2010 - 2012

Patent US 6,466,862, Case No. 3:09-cv-00642-HU

Role: Technical expert for plaintiff, hired by Perkins Coie LLP

Core Wireless Licensing S.A.R.L. vs. Samsung L.G.

2015

Patent US 7,072,667, Case No. 2:14-cv-911-JRG-RSP and 6:14-cv-751

Role: Technical expert for plaintiff, hired by Hueston Hennigan LLP

Entrepreneurship

Co-founder, SafelyYou, Advisor

2015 - present

Development of a deep learning based Alzheimer patient camera monitoring system for assisted living

Co-founder, Advisor, KarMode

2012 - 2014

Development of a MirrorLink based tablet solution for integration of mobile apps and services in cars.

Co-founder, Advisor, StreetOwl

2011 - 2013

StreetOwl is a start up which develops smartphone enabled driving scores for insurance premium pricing.

Manager, Epigraph LLC

June 2009

Epigraph LLC is a consulting company focused on mobile internet services, location based services, and mobile sensing.

UC BERKELEY TEACHING EXPERIENCE**EE128-ME134**

F13, F14

Feedback Control Systems [4 units]

CE291F-ME236-EE291c

F05, S06, S09, S10, F10, S12, S13, S14

Control and Optimization of Distributed Parameters Systems [3 units]

CE291G (taught under course number CE290 in Fall 2010)

S10

Advanced Control and Optimization of Distributed Parameters Systems [3 units]

CE191

F05, F06, F09, F16

Civil and Environmental Engineering Systems Analysis [3 units]

E7 (formerly E77)

S08, S10

Introduction to computer programming for scientists and engineers [4 units]

CE290Z

F06

Selected Topics in Air Transportation [2 units]

EE291e

F05

Hybrid and Embedded Systems (guest lecturer) [3 units]

CE301

F09, S10

Future Civil and Environmental Engineering Teaching Workshop [1 unit]

OTHER TEACHING EXPERIENCE**European Embedded Control Institute (EECI)**, Supelec, France

Spring 2008, Spring 2009

HYCON graduate school on control, *Verification and control of nonlinear systems*, class co-taught with Prof. Mitchell (UBC).**6th Maintenance Unit Regiment**

Sept. 1995 - Sept. 1996

Professor of military German language for officers, French Forces in Germany, Landau in der Pfalz, Germany.

PAST RESEARCH SUPERVISION**Past Post Doctoral Researchers**

Dr. Qingfang Wu

Sep. 2013 - Sep. 2015

Ph.D. Ph.D., UC Berkeley, CEE Environmental Engineering, 2013

Research topic: Real time flow estimation in channel networks using Lagrangian data.

Position shortly after: Research Engineer, US Geological Survey / UC Davis

Dr. Thomas Schreiter

Jan. 2013 - Aug. 2014

PhD Department of Civil and Environmental Engineering, DELFT, 2013

Research topic: Online imputation of missing data in sensor networks, application to traffic flow sensing

Position shortly after: Data Engineering Fellow, Insight Data Science, Palo Alto, CA.

Dr. Ethan Xuan

Sep. 2011 - Aug. 2014

Ph.D. Civil and Environmental Engineering, Transportation Engineering, UC Berkeley, 2011

Research topic: Incentivization mechanism for traffic for integrated corridor management.

Position shortly after: Software Engineer, FactSet, San Francisco, CA.

Dr. Nikos Bekiaris-Liberis

Aug. 2013 - Aug. 2014

PhD Department of Mechanical and Aerospace Engineering, UCSD, 2013

Research topic: estimation of crowds and traffic using mobile sensing

Position shortly after: Post Doctoral Researcher, Univ. of Crete.

Dr. Anastasios Kouvelas

Sep. 2012 - June 2014

Ph.D. Department of Production and Management Engineering, Univ. of Crete, 2011

Research topic: Use of probe data in arterial networks for integrated corridor management

Position shortly after: Research Engineer, TSS.

Dr. Ryan Herring

Jan. 2011 - May 2011

Ph.D. IEOR, University of California, Berkeley, 2010

Research topic: Design and development of machine learning algorithms for arterial traffic inference.

Position shortly after: Research Engineer, Apple.

Dr. Joos-Hendrik Bose

Oct. 2009 - May 2010

Ph.D. Computer Science, Freie Universität, Berlin, Germany, 2007

Research topic: Parallelization of machine learning algorithms for arterial traffic inference.

Position shortly after: Research Engineer, T-Mobile / Deutsche Telekom Labs.

Dr. Olli-Pekka Tossavainen

Aug. 2007 - Oct. 2010

Ph.D. Physics, University of Kuopio, Finland, 2007.

Research topic: Inverse modeling algorithms for Lagrangian sensor networks.

Position shortly after: Research Engineer, NAVTEQ.

Dr. Jeff Ban

May 2007 - Aug. 2008

Ph.D. CEE, University of Wisconsin-Madison, 2004.

Research topic: Sensor placement, mobile sensing, traffic information systems.

Position shortly after: Assistant Professor, Civil and Environmental Engineering, RPI.

Dr. Annalisa Scacchioli¹

Jan. 2007 - Mar. 2008

Ph.D. EECS, University of L'Aquila, Italy, 2005.

Research topic: Prediction of uncertainty propagation in hybrid simulations.

Position shortly after: Assistant Professor, New York University.

Past Ph.D. Students

Walid Krichene, EE, advised since June 2011

2016

Ph.D. thesis: *Nash-Stackelberg games in horizontal queuing networks.*

Position shortly after graduating: Research Scientist, Google, Mountain View, CA

Jack Reilly, CEE Systems,

2014

Ph.D. thesis title: *Security of Freeway Traffic Systems: A Distributed Optimal Control Approach.*

Position shortly after graduating: Research Scientist, Google, Mountain View, CA

Leah Anderson, CEE Systems,

2014

Ph.D. thesis title: *Optimal control of buoyant drifters under hydrodynamic forcing.*

Position shortly after graduating: Product Quality Engineer, Palantir Technologies, Palo Alto, CA

Timothy Hunter, CS,

2014

Ph.D. thesis title: *Large-scale, low-latency state estimation of cyberphysical systems, with an application to traffic estimation.*

Position shortly after graduating: Software Engineer, Databricks, San Francisco, CA

Samitha Samaranyake, CEE Systems,

2014

Ph.D. thesis title: *Routing strategies for the reliable and efficient utilization of road networks.*

Position shortly after graduating: Assistant Professor, Cornell University, Ithaca, NY

Kevin Weekly, EECS robotics,

2014

Ph.D. thesis title: *Applied Estimation of Mobile Environments.*

Position shortly after graduating: Research Scientist, Fitbit, San Francisco, CA

Qingfang Wu, CEE Env. Eng.

2013

Ph.D. thesis title: *Real Time Flow Estimation in Channel Networks using Lagrangian Data.*

Position shortly after graduating: Research Engineer, USGS/Davis

Aude Hofleitner, Electrical Engineering

2013

Ph.D. thesis title: *A hybrid approach of physical laws and data-driven modeling for estimation: the example of queuing networks.*

Position shortly after graduating: Research Engineer, Facebook Inc., Menlo Park, CA

Dr. Andrew Tinka, Electrical Engineering

2013

Ph.D. thesis title: *Actuated Mobile Sensing in Distributed, Unstructured Environments.*

Position shortly after graduating: Research Engineer, Kiva Systems, Boston, MA

¹Co-advised with Professor Božidar Stojadinović.

Dr. Tarek Rabbani, ² Mechanical Engineering	2013
Ph.D. thesis title: <i>Topics in Large-Scale Sparse Estimation and Control.</i>	
Position shortly after graduating: Engineer at Level-up Analytics, Mountain View, CA	
Dr. Sebastien Blandin, Civil and Environmental Engineering (Systems Engineering)	2012
Ph.D. thesis title: <i>Modeling, estimation and control of distributed parameter systems: application to transportation networks.</i>	
Position shortly after graduating: Research Engineer, IBM, Singapore.	
Dr. Mohammad Rafiee, Mechanical Engineering	2012
Ph.D. thesis title: <i>Data assimilation in large scale networks of open channels.</i>	
Position shortly after graduating: Engineer, Marin Software.	
Dr. Saurabh Amin, ³ Civil and Environmental Engineering (Systems Engineering)	2011
Ph.D. thesis title: <i>On cyber security for networked control systems.</i>	
Position shortly after graduating: Assistant Professor, Civil and Env. Eng, MIT.	
Dr. Daniel Work, Civil and Environmental Engineering (Systems Engineering)	2010
Ph.D. thesis title: <i>Real-time estimation of distributed parameters systems: application to traffic monitoring.</i>	
Position shortly after graduation: Assistant Professor, Civil and Env. Eng & Electrical and Computer Eng., UIUC.	
Christian Claudel, Electrical Engineering	2010
Ph.D. thesis title: <i>Convex formulations of inverse modeling problems on systems modeled by Hamilton-Jacobi equations. Applications to traffic flow engineering.</i>	
Position shortly after graduation: Assistant Professor, Mechanical Engineering, KAUST University, Saudi Arabia	
Dr. Ryan Herring, Industrial Engineering and Operations Research	2010
Ph.D. thesis title: <i>Real-time traffic modeling and estimation with streaming probe data using machine learning.</i>	
Position shortly after graduation: Research Engineer, Apple.	
Dr. Juan-Carlos Herrera, Civil and Environmental Engineering (Transportation Engineering)	2009
Ph.D. thesis title: <i>Assessment of GPS-enabled smartphone data and its use in traffic state estimation for highways.</i>	
Position shortly after graduation: Assistant Professor, Civil Engineering, Pontificia Universidad Catolica de Chile.	
Dr. Issam Strub, Civil and Environmental Engineering (Systems Engineering)	2009
Ph.D. thesis title: <i>Modelling and simulation of large scale distributed parameter systems.</i>	
Position shortly after leaving UC Berkeley: Research Scientist, The Cambridge Strategy (Asset Management) Ltd.	
Dr. Dengfeng Sun, Civil and Environmental Engineering (Systems Engineering)	2008
Ph.D. thesis title: <i>Large-scale modeling and optimization of en-route air traffic flow.</i>	
Position shortly after graduation: Assistant Professor, Aeronautics and Astronautics, Purdue University.	

Past M.S. Students

Nicolas Laurent-Brouty, CEE Transportation Engineering	2016
MS thesis / project title: <i>Negative externalities of GPS-enabled routing applications: a game theoretical approach</i>	
Sami Malek, CEE Systems, (M.S. EECS), courtesy co-advising for Prof. Steven Glaser	2015
M.S. thesis / project title: <i>Real time ground measurement system</i>	
Paul N. Gabet, CEE Systems	2014
M.S. thesis / project title: <i>Costs analysis of implementing Integrated Corridor Management tools.</i>	
Boris Prodhomme, Industrial Engineering and Operations Research	2012
M.S. thesis / project title: <i>Data quality metrics for fusion of smartphone data.</i>	
Paul Borokhov, CEE Systems	2012
M.S. thesis / project title: <i>Eco-routing with dynamic traffic forecast.</i>	
Carlos Oroza, CEE Systems	2012
M.S. thesis / project title: <i>Depth echo sounder based autonomous drifter design for bathymetry mapping.</i>	
Jonathan Beard, Mechanical Engineering, incoming	2012
M.S. thesis / project title: <i>Sliding mode control of a dual propeller Lagrangian sensor.</i>	
Jack Reilly, CEE Systems, UC Berkeley.	2010
M.S. thesis / project title: <i>iShake: using personal devices to deliver rapid, semi quantitative earthquake information.</i>	

²Co-advised with Laurent El Ghaoui.

³Co-advised with Professor Shankar Sastry.

Leah Anderson, CEE Systems, UC Berkeley. M.S. thesis / project title: <i>Real-time integration of drifter data in hydrodynamic models.</i>	2010
Pierre-Emmanuel Mazare, CEE Transportation, UC Berkeley. M.S. thesis / project title: <i>Dynamic routing in the presence of uncertainty in hybrid transportation networks.</i>	2010
Matthieu Nahoum, CEE Systems, UC Berkeley M.S. thesis / project title: <i>Model based detection of errors in static sensor networks for transportation system.</i>	2010
Christian Claudel, EE, UC Berkeley M.S. thesis / project title: <i>Solutions to switched Hamilton-Jacobi equations and conservation laws using hybrid components.</i>	2009
Aude Hofleitner, Ecole Nationale des Ponts et Chausees, France M.S. thesis / project title: <i>Using cellular phones for traffic monitoring.</i>	2009
Julie Percelay, Ecole Nationale des Ponts et Chausees, visiting graduate student M.S. thesis / project title: <i>Data assimilation algorithms for shallow water flows.</i>	2008
Tarek Rabbani, ME, UC Berkeley, M.S. thesis / project title: <i>Differential flatness and optimization based control and estimation of hydraulic systems.</i>	2008
Jessica Pannequin, EE, UC Berkeley M.S. thesis / project title: <i>Nonlinear model predictive control applied to multiple aircraft deconflicted path planning with weather avoidance constraints.</i>	2007
Stephane Martinez, Ecole Nationale de l'Aviation Civile, France M.S. thesis / project title: <i>Dynamic sectorization of the airspace.</i>	2007

Past MEng. Students

Jun Jie Ng, EECS, UC Berkeley	2016
Chong Wee Tan, IEOR, UC Berkeley	2016
Marie Douriez, IEOR, UC Berkeley	2016
Ludovic Thea, IEOR, UC Berkeley	2016
Yanrong Li, EECS, UC Berkeley	2016
MEng thesis title (group project): Machine Learning, Wearable Computing and Alzheimer's Disease	

Past M.B.A. Students

Lauren Devos (as part of Lean Launchpad class, NestSense)	2015
Anna Stolyarova (as part of Lean Launchpad class, NestSense)	2015

Past undergraduate students and interns

(V): visiting student, (B): Berkeley student, year indicates period of visit, collaboration, or employment while at UC Berkeley	
Carol Minna Zhang (B), Civil and Environmental Engineering	2016
Ana Jamshidnejad (V), TU Delft, The Netherlands	2016
Bradley Zylstra (V), Randolph College	2016
Oriana Peltzer (V), ENSAM, France,	2016
Oumaima Makhlouk, ENSAM, France,	2016
Pierre-Louis Ehret (V), ENSAM, France,	2016
Daniel Haziza (V), Ecole Polytechnique, France,	2016
Chedly Bourghiba (V), Ecole Polytechnique, France,	2016
Julien Jacquemot (V), Ecole Polytechnique Federale de Lausanne	2015
Cyril Tamraz (V), American University of Beirut, Lebanon	2015
Thomas Avice (V), Ecole Nationale Supérieure des Arts et Metiers (ENSAM)	2015
Ramon Alonso (B), Electrical Engineering	2015
Nils Breyer (V), University of Linköping, Sweden	2015
Deepak Talwar (B), Electrical Engineering and Computer Science	2014-2015
Mandy Huo (B), Department of Physics ⁴	2014
Nicolas Signole (V), Ecole Nationale Supérieure des Arts et Metiers (ENSAM)	2014
Martin Gouy (V), Ecole Nationale Supérieure des Arts et Metiers (ENSAM)	2014
Han Zou (V), National University of Singapore,	2014

⁴Honor's Thesis: "add title here"

Fouad Tabsh (V), American University of Beirut	2014
Ziad Al Habibi (V), American University of Beirut	2014
Sadeel Mustafa (V), American University of Beirut	2014
Syrine Krichene (V), ENSIMAG, Grenoble	2014
Nicolas Plain (V), Ecole Polytechnique, France	2014
Milena Suarez (V), Ecole Polytechnique, France	2014
Antoine Grappin (V), Ecole Polytechnique / Ecole des Mines de Paris, France	2014
Rim Harriss (V), Ecole Polytechnique, France	2014
Paul van Erp (V), Transportation and planning, DELFT University	2014
Yi Zhou (B), IEOR,	2013
Nate Bailey (B), Mechanical Engineering	2013
Kevin Sheu (V), Electrical Engineering, UCLA	2013
William Nouet (V), Ecole Nationale Supérieure des Arts et Métiers (ENSAM)	2013
Farhad Farokhi (V), KTH, Sweden	2013
Ahmed Alaoui (V) Ecole Normale Supérieure / Ecole Polytechnique, France	2013
Benjamin Drighes (V), Ecole Polytechnique, France	2013
Jean-Baptiste Lespiau (V), Ecole Polytechnique, France	2013
Guillaume Sabran (V), Ecole Polytechnique, France	2013
Maria Laura Delle Monache (V), INRIA, France	2012
Mats Sandin (V), Linköping University, Sweden	2012
Magnus Fransson (V), Linköping University, Sweden	2012
Agathe Benoit (V), Ecole Polytechnique, France	2012
Axel Parmentier (V), Ecole Polytechnique, France	2012
Yasser Jebbari (V), Ecole Polytechnique, France	2012
Frederic Wylomanski (V), Ecole Polytechnique, France	2012
Thomas Cassou (V), Ecole Polytechnique, France	2012
Julien Nacheff (V), Ecole Nationale Supérieure des Arts et Métiers (ENSAM)	2012
Manuel Jakob (V), Technische Universität Darmstadt, Germany	2011-2012
Joao Rodriguez (V), University of Porto, France	2011-2012
Chiheng Huor (B), B.S. Mechanical Engineering,	2011-2012
Axel Barrau (V), Ecole Polytechnique, France	2011
Kenza Skali (V), Ecole Polytechnique, France	2011
Otilia Anton (V), Ecole Polytechnique, France	2011
Constant Bails (V), Ecole Polytechnique, France	2011
Emmanuel Malherbe (V), Ecole Polytechnique, France	2011
Samuel Rosat (V), Ecole Polytechnique, France	2011
Jean-Benoit Saint-Pierre (V), Ecole Polytechnique, France	2010
Jean-Baptiste Gariel (V), Ecole Nationale des Arts et Métiers, France	2010
Timothee Chamoin (V), Ecole Polytechnique, France	2010
Jerome Thai (V), Ecole Polytechnique, France	2010
Adrien Couque (V), Ecole des Mines, France	2010
Walid Krichene (V), Ecole des Mines, France	2010
Derek Speer (B), CEE	2010
Brenda Dix (B), CEE	2010
Mario Iglesias (B), CEE	2010
Jonathan Beard (B), B.S. ME	2010
Julien Monteil (V), B.S. ENTPE, France	2010
Mari Ervasti (V), M.S. VTT, Finland	2010
Pierre-Henri Reilhac (V), B.S. ENSIETA, France	2010
Paul Borokhov (B), B.S. CEE	2010
Sarah Stern (B), B.S. CEE	2009
Carlos Oroza (B), B.S. ME	2009
Romain Hill (V), BS Ecole des Mines de Paris, France	2009
Nadine Moacdieh (V), American University of Beirut, Lebanon	2009
Tim Kazik (V), BS ETHZ, Zürich, Switzerland	2009
Alfred Tran (B), B.S. CEE	2009
Emmanuel Sevrin (V), Ecole Polytechnique, France	2009
Tania Abou Nasr (V), Ecole Polytechnique, France	2009
Pierre-Emmanuel Mazare (V), Ecole Polytechnique, France	2009
David Wood (B), EECS	2009

Colin Foe-Parker (B), ME	2009
Matt Holland (B), EECS	2009
Dennis Chan (B), EECS	2009
Martin Deterre (V), Ecole Polytechnique, France	2008
Fabien Chraim (V), American University of Beirut, Lebanon	2008
Marcella Gomez (B), ME	2008
Jason Wexler (B), ME	2008
Andrew Spencer (B), ME	2008
Nico Van Der Kolk (B), ME	2008
Sebastien Diemer (V), Ecole Nationale Supérieure des Mines de Paris, France	2008
Florent Di Meglio (V), Ecole Nationale Supérieure des Mines de Paris, France	2007
Jonathan Elithorpe (B), EECS	2006
Anwar Ghoche (V), CEE American University of Beirut, Lebanon	2006
Tarek Ibrahim (V), EECS American University of Beirut, Lebanon	2006
Nahi Ojeil (V), EECS American University of Beirut, Lebanon	2006
Elie El Khoury (V), EECS American University of Beirut, Lebanon	2006
Alaa Hilal (V), EECS American University of Beirut, Lebanon	2006
Ibtissam Ezzeddine (V), EECS American University of Beirut, Lebanon	2006
Remy Nollet (V), Ecole Polytechnique, France	2005
Antoine Bonnet (V), Ecole Polytechnique, France	2005
Christiane Zoghbi (V), CEE American University of Beirut, Lebanon	2005
Tarek Rabbani (V), ME American University of Beirut, Lebanon	2005

CURRENT RESEARCH SUPERVISION

Current Post Doctoral Researchers

Dr. Alexander Keimer PhD Department of Mathematics, Friedrich-Alexander-Universität Erlangen-Nürnberg, 2015 Research topic: Development of new flow models for large scale network traffic analysis	April. 2016 - April. 2018
Dr. Anthony Patire Ph.D. Civil and Environmental Engineering, Transportation Engineering, UC Berkeley, 2010 Research topic: Integration of Lagrangian data into flow models, data fusion.	Sep. 2010 - onward
Dr. Qijian Gan PhD Department of Civil and Environmental Engineering, UC Irvine, 2014 Research topic: Macroscopic modeling and analysis of vehicular urban traffic.	Dec. 2015 - April. 2017
Dr. Juliette Gamabra PhD Department of Civil and Environmental Engineering, UC Dallas, 2016 Research topic: HPC-enabled computations of Nash equilibria through distributed formulations of convex programs	Feb.2017 - onward

Current Ph.D. Students

Abdulaziz Khyiami, CEE systems, advised since Sep. 2016 Ph.D. thesis: <i>Application of game theory to energy flows</i>	Expected Graduation: Spring 2020
Teddy Forscher, CEE systems / City and regional planning, advised since Sep. 2016 Ph.D. thesis: <i>Regulation of mobile app users through congestion pricing</i>	Expected Graduation: Spring 2020
Emily Porter, CEE systems, advised since Jan. 2017 Ph.D. thesis: <i>PDE models for information based dynamic routing</i>	Expected Graduation: Spring 2020
Jerome Thai, EECS, advised since Feb. 2012 Ph.D. thesis: <i>Statistical learning for crowdsourced data.</i>	Expected Graduation: Spring 2015
Cathy Wu, EECS, incoming Fall 2014 Ph.D. thesis: <i>Reinforcement learning based control of large scale urban networks</i>	Expected Graduation: Spring 2018
George Netscher, EECS, advised since Fall 2014 Ph.D. thesis: <i>Using connected devices to monitor neuro-degenerative processes</i>	Expected Graduation: Spring 2018

Current MEng. Students

Fu-Chi Shih, IEOR	2016-2017
Anamika Tyagi, IEOR	2016-2017
Fu-Chi Shih IEOR	2016-2017
Anamika Tyagi IEOR	2016-2017
Project title: Measuring and simulating the impact of routing services on congestion patterns in large scale cities	

Student awards

Cathy Wu, Rising Star Fellow, Carnegie Mellon University	2016
Chedly Bourghiba, Felicitations du Jury, Stage d'Option, Ecole Polytechnique	2016
Walid Krichene, Leon O Chua Award, UC Berkeley	2015
Cathy Wu, Eisenhower Fellow, US DOT (declined)	2015
Jack Reilly, Pikarsky Award in Science and Technology for best Ph.D., Council of Univ. Transportation Centers	2014
Sebastien Martin, Prix du stage d'Option, Applied Mathematics, Ecole Polytechnique	2014
Han Zou, Microsoft Indoor Localization Competition, IPSN, Berlin, third place	2014
Kevin Weekly, PhD Innovation Prize, EECS	2014
Walid Krichene, Outstanding GSI award for EE128/ME134 (F13), UC Berkeley	2014
Benjamin Drighes, Grand Prix du Stage de Recherche, Ecole Polytechnique	2013
Jean-Baptiste Lespiau, Prix du Stage de Recherche, Ecole Polytechnique	2013
Qingfang Wu, Delta-Science Fellowship, Delta Stewardship Council	2013
Ahmed El Alaoui, EECS Gold Fellowship, UC Berkeley	2013
Mats Sandin and Magnus Fransson, Prize for the best thesis of 2012, ITN Department, Linkoping University, Sweden	2013
Aude Hofleitner, Prix 2012 de la Chaire Abertis for best Ph.D. thesis, France	2013
Walid Krichene, Eltoukhy East-West Gateway Fellow	2012
Yasser Jebbari Félicitations du Jury de Stage d'Option, Ecole Polytechnique, France	2012
Walid Krichene, Chevron-Xenel Gateway Fellow	2011
Walid Krichene, EECS Excellence award. UC Berkeley	2011
Samitha Samaranyake, Eisenower Fellow, US Department of Transportation	2012
Andrew Tinka, Outstanding GSI Award, EE42/100 (F11), UC Berkeley	2011
Dan Work, Best Ph.D. Dissertation Award, IEEE Intelligent Transportation Systems Society	2011
Sebastien Blandin, UCTC Dissertation Grant, UC Transportation Center	2011
Timmy Siau, Department Instructional Distinction Award, for E7, Civil and Environmental Engineering	2011
Aude Hofleitner, Eisenower Fellow, US Department of Transportation	2011
Sebastien Blandin, Finalist Best Student Paper Award , IEEE Conference on Decision and Control, Atlanta	2010
Timothee Chamoin, Prix de Stage d'Option, Mathematiques Appliquees, Ecole Polytechnique, France	2010
Sebastien Blandin, Eisenower Fellow, US Department of Transportation	2010
Christian Claudel, Leon O Chua Award, UC Berkeley	2010
Carlos Oroza, NSF IGERT Fellow, CiBER-IGERT PROGRAM, National Science Foundation	2010
Dan Work, Rodney E. Slater Award, ENO Transportation Foundation	2010
Dan Work, outstanding GSI award, GSI for CE191 (F09), UC Berkeley	2010
Dan Work, ENO Fellow, ENO Transportation Foundation	2010
Andrew Tinka, NASA Top 10 Innovators on water (Launch 2010), NASA	2010
Dan Work, Student of the Year Award, UC Transportation Center	2009
Dan Work, Eisenower Fellow, US Department of Transportation	2008
Timmy Siau, Berkeley Teaching Effectiveness Award, UC Berkeley	2008
Claire Saint-Pierre, Outstanding GSI Award, Head GSI for E7 (S08) UC Berkeley	2008
Timmy Siau, Outstanding GSI Award, GSI for E7 (S08), UC Berkeley	2008
James Lew, Outstanding GSI Award, GSI for E7 (S08), UC Berkeley	2008
James Lew, Oustanding GSI Award, GSI for E7 (S08), UC Berkeley	2008
Andrew Tinka, Clean Technology Innovation Prize, Berkeley Center for Entrepreneurship & Technology	2008
Andrew Tinka, NSERC Fellow, Canada	2007
Andrew Tinka, Outstanding GSI Award, CE191 (F07), UC Berkeley	2007
Charles Antoine Robelin, Oustanding GSI Award (F06), CE191, UC Berkeley	2006

ACADEMIC SERVICE (UC BERKELEY AND LBNL)

Service to the UC-wide system (incl. Lawrence Berkeley National Laboratory)

Member, UC-wide ITS Board, ex officio, UC Office of the President	2015 - present
Director, Transportation Center, LBNL	2014 - present
Steering Committee Member, SMART Mobility (DOE), LBNL	2015 - present
Steering Committee Member, OPTIMA (DOE), LBNL	2015
Vehicle Access and Alternative Transportation Advisory Group Member, LBNL	2016

Service to the Campus

Ad hoc committee for promotion of Professor [name confidential] to Full Professor	2017
Freshman admission committee member	2016 - present
Interviewer, Regents' and Chancellor's Scholarship Program	2015 - present
Director, Institute for Transportation Studies,	2014 - present
Reviewer, France Berkeley Fund	2014, 2016
Reviewer, UCCONNECT	2016
Reviewer, Peder Sather Center for Advanced Study	2013
Founding Director, Silicon Valley Innovation and Entrepreneurship Program	2013
Transportation Sustainability Research Center (TSRC), University of California	2011 - 2012
Ad hoc Committee for recruitment of an Adjunct Professor [name confidential]	2011
Taskforce for USACE - UC Berkeley Research Center Planning	2010
E7 Course Articulation Faculty, Office of Undergraduate Admissions	2010 - present

Service to the College of Engineering

CET Faculty Steering Committee	Fall 2013 - present
Chair, Committee on Computing and Computer Sciences Education	Spring 2010 - present
SUPERB committee	2010 - present
Ad hoc Committee on E7	Spring 2008 - present
Advisory Committee on International Collaboration	Spring 2008 - present
Committee on Computing and Computer Sciences Education	Spring 2007 - Spring 2010
Taskforce on Control Courses in the College of Engineering	Fall 2007
CITRIS Building Cyber Cafe Space Committee	Fall 2005 - Spring 2007

Service to the Civil and Environmental Engineering Department

Ad Hoc Committee, mid career [name confidential]	2016
Group leader, Systems Program	2014 - present
Search Committee for 2014-15 CEE Lecturer Pool in AP Recruit	2014 - 2015
Conflict of Interest Oversight Committee for students of Professor [Name confidential]	2013 - present
ASCE Faculty Advisor	2009 - 2011
CEE Taskforce on Teaching Workload	Spring 2010
Strategic Planning Committee	2007 - 2014
Systems Engineering Committee	2005-2013
Certificate Program in Intelligent Transportation Systems Taskforce	Fall 2005 - Spring 2006

Service to the Electrical Engineering and Computer Science Department

Recruiting committee	2017
Linear Prelims Committee Member	2016
Graduate Advising and Admissions Standing Committee	2011 - 2013
Undergraduate student faculty advisor	2010 - 2012

MILITARY STATUS

Major (Ingenieur Principal de l'Armement), Department of Defense, France
Promoted Major in 2004, on leave November 2004 – June 2010, active reserve since June 2010.

PROFESSIONAL AFFILIATIONS

IEEE, Institute of Electrical and Electronics Engineers (current)
AIAA, American Institute of Aeronautics and Astronautics (past)
ASCE, American Society of Civil Engineers (current)

PROFESSIONAL SERVICE

National Research Council, The National Academies

Member of the committee on 21st Century Cyber Physical Systems Education 2014
Member of the committee on the future US workforce for geospatial intelligence 2011
Role within committee: assessment of workforce exposure to participatory sensing and crowdsourcing.

Testimony and public hearings

California State Assembly Transportation Committee, Sacramento, CA, Mar. 14, 2016
Chair: Assemblymember Frazier, Highlights from University of California's Institute of Transportation Studies.
California Senate Budget and Fiscal Review Subcommittee No. 2, Sacramento, CA, Apr. 14
Chair Senator Wolk, Increased funding for the University of California Institute of Transportation Studies.

Conference Chair or Co-Chair

Steering Committee member 2016
"International Conference on Cyber Physical Systems (ICCPS)," Vienna, Austria
Conference General Chair 2015
"International Conference on Cyber Physical Systems (ICCPS)," Seattle, WA
Conference Program Committee Co-Chair 2014
"International Conference on Cyber Physical Systems (ICCPS)," Berlin, Germany

Workshop or Conference Organizer and other

Conference Program Committee Member "Machine learning for large scale transportation systems", 2016
Knowledge Discovery and Data (KDD) Mining, 2016, San Francisco
Institute for Pure and Applied Mathematics (IPAM), UCLA Sep 2015 - Dec. 2015
Long program title: "New Directions in Mathematical Approaches for Traffic Flow Management"
- Traffic Flow Management Opening Day Workshop September 8, 2015
- Mathematical Approaches for Traffic Flow Management Tutorials September 9-12, 2015
- Workshop I: Mathematical Foundations of Traffic September 28 - October 2, 2015
- Outreach day: Advancing Traffic Control through Big Data and Connectivity October 7, 2015
- Workshop II: Traffic Estimation October 12-16, 2015
- Workshop III: Traffic Control October 26-30, 2015
- Workshop IV: Decision Support for Traffic November 16-20, 2015
- Culminating Workshop at Lake Arrowhead Conference Center December 6-11, 2015
Member of the Program Committee 2013
2nd International Workshop on Urban Computing (UrbComp 2013)
Member of the Program Committee 2012
5th International Workshop on Computational Transportation Science (Redondo Beach, CA)
Workshop Chair and Host "Traffic modeling and estimation at the age of smartphones" 2011
IEEE Conference on Decision and Control, European Control Conference
Member of the Program Committee 2010
Workshop on Secure Control Systems (SCS), Cyberphysical Week 2010 (Stockholm, Sweden)
Member of the Program Committee 2008 - 2012
International Workshop Hybrid Systems: Computation and Control (HSCC)
Invited Session Organizer and Chair, "Multi Agent System Analysis" 2007
2007 American Control Conference
Organizing Committee Member 2002

Workshop Chair, Co-Chair or Host

<i>Workshop co-Chair</i>	2015
“Set-valued Approaches to Control Problems with Applications in Traffic Flow Modeling” 2015 SIAM Conference on Control and Its Applications (CT15), Paris, France	
<i>Workshop co-Chair</i>	2013
“Traffic Modeling and Management: Trends and Perspectives” INRIA Sophia Antipolis, France	
<i>Workshop Participant</i>	2012
“Analysis and Design of Cyber-Physical Transportation Systems: Challenges, Progress, and Future Directions” American Control Conference, Montreal, Canada [talk presented by Dan Work]	
<i>Workshop Chair</i>	2011
“Mathematics of Traffic Flow Modeling, Estimation and Control” Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, CA	
<i>Workshop Host</i>	2011
“Active Transportation and Demand Management (ATDM) Workshop” Federal Highway Administration (FHWA) – UC Berkeley, Berkeley, CA	
<i>Workshop Organizer and Co-Chair</i>	2008
“Irrigation channels and related problems” Consiglio Nazionale delle Ricerche (CNR), Italy	
<i>Workshop Organizer and Co-Chair</i>	2008
2008 EU-US08: workshop on cyberphysical systems KTH, Stockholm, Sweden	
<i>Workshop Organizer and Co-Chair</i>	2007
Satellite workshop, “Modeling and control of physical networks” 10th International Workshop Hybrid Systems: Computation and Control (HSCC), Pisa, Italy	
<i>Tutorial Session Organizer and Co-Chair</i>	2006
“Modeling, Optimization and Software in Air Traffic Management” 45th IEEE Conference on Decision and Control, San Diego, CA	
 Panels	
<i>Panelist: Driving Smart Cities forward</i> , MIT-IDSS Launch Event Confirmation Massachusetts Institute of Technology, Cambridge, MA	2016
<i>Panelist: Machine learning for large scale transportation systems</i> <i>Knowledge Discovery and Data (KDD) Mining</i> , 2016, San Francisco, CA	2016
<i>Panelist: Planning for Multi-Modal System Management & Operations – A Fire Side Chat</i> California Transportation Planning Conference, Los Angeles, CA	2015
<i>Panel moderator: The future of Smart Cities and urban mobility</i> CITRIS - INRIA Annual Workshop, UC Berkeley, CA	2015
<i>Panel moderator: The future of automated driving, a roundtable and panel</i> Institute of Transportation Studies, UC Berkeley, CA	2014
<i>Panelist: Integrated Corridor Management</i> ITS California, Santa Clara, CA	2014
<i>Panelist: Urban Life and Mobility Services</i> EIT CT Labs, Rocket Space, San Francisco, CA	2014
<i>Panelist: Sensors and sensor networks</i> Measuring Development, Energy & Environment, World Bank and CEGA, Berkeley, CA	2014
<i>Panelist: Good Morning California: Integrated Corridor Management</i> TRB Mid-Year meeting, Beckman Center, Irvine, CA	2014

<i>Panelist: Challenges and opportunities in CPS education</i>	2014
Committee on 21st Century Cyber-Physical Systems Education: Defining Needs and Identifying Challenges, National Academy of Sciences, Washington, DC	
<i>Panelist: Future directions for CPS in Europe</i>	2014
CPS20: CPS 20 years from now - visions and challenges, CyPhERS 2nd Experts Workshop, CPSWeek 2014, Berlin, Germany, April 14, 2014	
<i>Panelist: Connected Commuting</i>	2013
VERGE – Where tech meets sustainability, San Francisco, CA	
<i>Panelist: Debate on entrepreneurship in honor of Fleur Pellerin, Ministre PME - Innovation, Economie Numerique</i>	2013
L’Atelier – Consulat de France, San Francisco, CA	
<i>Panelist: Digital technologies for making our cities a better place to live</i>	2013
Berkeley-Stanford-INRIA workshop, Stanford University	
<i>Panelist: Tau Beta Pi</i>	2013
Tau Beta Pi undergraduate research panel, UC Berkeley	
<i>Panelist: Visualizing the environment</i>	2013
“Streams, gardens & clouds, visualizing dynamic data for engagement, education and the environment” UC Berkeley	
<i>Panelist: Making the city more attractive with information and communication technology</i>	2012
California France Forum on Energy Efficiency Technologies (CAFFEET), UC Berkeley	
<i>Panelist: Citizen participation</i>	2012
Urban Systems Collaborative, UCTC, UC Berkeley	
<i>Panelist: Probe Data Analysis, Challenges, & Opportunities</i>	2012
IEEE Intelligent Transportation Systems (ITSC) Conference, Anchorage, AK	
<i>Panelist: The Big Payoff in Big Data</i>	2012
UC Berkeley College of Engineering Dean’s Society, Marvell corporate headquarters, Santa Clara, CA	
<i>Panel Chair: Student led Green initiatives (NTU/NUS) – Energy Carta, Earthlink, IET, and GSTS</i>	2011
SinBerBest Kick-Off Workshop, Nanyang Technical University, Singapore	
<i>Panel Chair: Smart Transportation Panel</i>	2011
SVC Wireless Annual Conference, Mountain View, CA	
<i>Panel Chair: Research Perspectives on Ecodriving</i>	2011
2011 Eco-Driving Workshop, UC Berkeley, CA	
<i>Panel Participant: Water, the 21st Century Strategic Resource</i>	2010
2010 CleanTech Open National Conference, Santa Clara, CA	
<i>Panel Participant: Enhancing Security and Privacy of Networked Control Systems</i>	2010
TRUST Workshop on Secure Control Systems, Stockholm, Sweden	
<i>Panel Participant: Future Challenges in Embedded Reasoning: Intelligence in Embedded Systems</i>	2010
AAAI Spring Symposia Series, Stanford, CA	
<i>Panel Session Chair: Industry Applications, VOLVO Week</i>	2008
VOLVO Center for Future Urban Transport Workshop, Berkeley, CA	

Service to Government Agencies

Member, Research Advisory Panel, *Land and Transportation* , Singapore 2015 - 2017

Board memberships

VIMADES Inc. 2007 - present
VIMADES Inc. is an engineering firm focused on the development of optimal control and viability based software products.

LASTRE 2003 - present
LASTRE, is a French nonprofit aimed at accelerating the deployment of optimal control and viability tools to industry.

Other service to the profession

Participant, <i>Microsoft Faculty Summit</i> , Seattle, WA	2013
Invited to participate to discussions with Microsoft Research Leadership about mobile and cloud computing	
Member, <i>Connected Commuting Task Force</i> , New Cities Foundation	2012
My role in this task force was to lead research on social network data for traffic.	
Member, <i>Technical Committee on Building Automation</i> , IEEE Robotics and Automation Society	2012 - present
My role in this committee is to advise on the use of mobile sensing for smart buildings	
Member, <i>Advisory committee, META-CDM Air Traffic Control center</i>	2012 - Present
My role in this committee is to advise on the use of smartphone technologies to monitor pedestrians in airports	
Member, <i>TRB Subcommittee on Computational Transportation and Society</i>	2012 - Present
My role within this committee is to represent participatory sensing and crowdsourcing within the committee.	
Member, <i>IEEE-CSS technical committee on distributed parameter systems</i>	2011 - Present
My role within this committee is to promote research on distributed parameter systems within the CSS (and IEEE)	
Participant, <i>Google Faculty Summit</i> , Mountain View, CA	2010
Invited to participate to discussions with Google Senior Leadership and faculty colleagues about mobile and cloud computing	
Co-organizer of the <i>CITRIS Distinguished Lectures on Intelligent Infrastructure Systems</i> , UC Berkeley, CA	Fall 2009
Created the event, programmed lecture series, hosted the speakers and organized the live broadcast and archival of videos	
Organizer of the <i>Nokia Distinguished Lectures on Cyber Physical Systems</i> , UC Berkeley, CA	Fall 2008
Created the event, programmed lecture series, hosted the speakers and organized the live broadcast and archival of videos	
Invited Professor, HYCON graduate school on control European Embedded Control Institute, Supelec, France Course title: <i>Verification and control of nonlinear systems</i>	Jan. 12th-Jan. 16th, 2009
Invited Professor, HYCON graduate school on control European Embedded Control Institute, Supelec, France Course title: <i>Verification and control of nonlinear systems</i>	Mar. 25th - Mar. 28th, 2008
Society of Women Engineers (SWE) <i>Mini University</i> high school outreach, Berkeley Course title: <i>Mobile sensing: applications of cellular phone technology</i>	Mar. 2009, Mar. 2010, Apr. 2011

Other service

Volunteer Mathematics Teacher, Frank Havens School, Piedmont, CA	2013 - 2014
Advisor, Openclassrooms (www.openclassrooms.com)	2016

Reviewer activities

- *Associate Editor*
 - IEEE Transactions on Automation Science and Engineering, Guest Associate Editor 2015
 - Transportation Research - Part C, Associate Editor 2012 - 2014
 - Discrete and Continuous Dynamical Systems, Guest Associate Editor 2013
 - Networks and Heterogeneous Media, Guest Associate Editor 2008, 2009, 2012
- *Proposal review*
 - A*STAR, President Technology Award, Singapore 2015
 - UCCONNECT, *Institute for Transportation Studies*, UC Berkeley 2014
 - Peder Sather Center for Advanced Study, UC Berkeley 2013
 - Netherlands Organisation for Scientific Research (NWO), The Netherlands 2010
 - National Science Foundation (NSF), panel number(s) and directorate(s) confidential 2007
 - Istituto Nazionale di Alta Matematica (INdAM), Italy 2005
- *Ph.D. thesis committee member, reviewer, rapporteur (outside of my own Ph.D. students)*
 - UC Berkeley, over 40 2005 - present
 - National Technical University (NTU), School of EEE, Long Yushen (PhD) 2016
 - University of Michigan, Department of Mechanical Engineering, Jin Ge (PhD) 2016
 - Georgia Institute of Technology, Department of Aeronautics and Astronautics, Aude Marzuoli (PhD) 2015
 - Universite Blaise Pascal, Clermont Ferrand, France, Department of Mathematics, Sophie Martin (HDR) 2014
 - Universite Paris Est, Paris, France, Department of Mathematics, Vincent Aguilera (HDR) 2014

- *University of Kaiserslautern*, Germany, Departement of Mathematics, Sebastian Kuhn (PhD) 2014
- *Ecole Nationale des Ponts et Chaussees*, France, IFSTAR, Aude Hofleitner (PhD) 2013
- *Agro Paris Tech*, France, Departement de Mecanique des Fluides, Simon Munier (PhD) 2009
- *Other reviewer activities*
- Outstanding Automatica Reviewer 2003
- European PhD Award on Control for Complex and Heterogeneous Systems 2014
- *Book referee*
- AIMS (American Institute of Mathematical Sciences) 2016
- *Journal referee*
- AIAA Journal of Aerospace Computing, Information, and Communication 2009
- AIAA Journal of Aircraft 2007
- AIAA Journal on Guidance, Control and Dynamics 2003, 2005, 2016
- Air Traffic Control Quarterly 2003
- ASCE Journal of Infrastructure Systems 2005
- ASME Journal of Dynamic Systems, Measurement and Control 2008 - 2010
- Automatica 2002 - 2004, 2010
- Computer-Aided Civil and Infrastructure Engineering 2010, 2013
- Discrete and Continuous Dynamical Systems 2013
- Discrete Event Dynamic Systems 2013
- IEEE Transactions on Automatic Control 2002, 2006 - 2007
- IEEE Transactions on Automation Science and Engineering 2009
- IEEE Transactions on Control of Network Systems 2014
- IEEE Transactions on Control Systems Technology 2002 - 2004
- IEEE Transactions on Intelligent Transportation Systems 2004, 2010
- IEEE Transactions on Mobile Computing 2011 - 2012
- IEEE Transactions on Robotics 2008
- IFAC Control Engineering Practice 2003
- International Game Theory Review 2002
- International Symposium on Transportation and Traffic Theory 2016
- The International Journal of Powertrains (IJPT) 2014
- International Journal on Robust and Nonlinear Control 2005 - 2006
- Networks and Heterogeneous Media 2007
- Operations Research 2009
- Proceedings of the IEEE 2008
- Robotics and Autonomous Systems 2010
- SIAM Journal on Control and Optimization 2006, 2009 - 2010
- SIAM Journal on Applied Mathematics 2014
- Transportation Science 2006, 2008 - 2010
- Transportation Research Part B 2009 - 2012
- Transportation Research Part C 2011
- *Conference referee*
- ACM SIGSPATIAL International Workshop on Computational Transportation Science 2012
- AIAA Conference on Guidance, Control and Dynamics 2004 - 2006
- American Control Conference (ACC) 2002 - 2007, 2009, 2010, 2012
- International Conference on Cyber-Physical Systems (ICCPs) 2010
- International Symposium on Transportation and Traffic Theory (ISTTT) 2010
- IFAC World Congress 2014
- IEEE Conference on Decision and Control (CDC) 2001 - 2007, 2009
- IEEE Conference on Intelligent Transportation Systems (CITS) 2010, 2016
- International Workshop Hybrid Systems: Computation and Control 2001 - 2005, 2008 - 2010
- Mobile Systems and Applications (MOBISYS) 2010
- SIGKDD Conference on Knowledge Discovery and Data Mining (KDD) 2016
- Transportation Research Board 2009, 2010
- World Conference on Transportation Research (WCTR) 2007

PUBLICATIONS

Underlined names are students, post doctoral researchers or staff working as advisee.

Books

1. J.-P. Aubin, A. Bayen and P. Saint-Pierre, *Viability Theory: New Directions*. Springer-Verlag, Second Edition, 2011. ISBN 978-3-642-16683-9.
2. T. Siau and A. Bayen, *An Introduction to MATLAB Programming and Numerical Methods for Engineers*. 2014, Academic Press, 1st Edition, Elsevier. ISBN: 9780124202283

Journal publications

Published, in press, accepted

1. S. Blandin, X. Litrico, B. Piccoli and A. Bayen, “Regularity and Lyapunov stabilization of weak entropy solutions to scalar conservation laws,” *IEEE Transactions on Automatic Control*, in press 2016
2. Q. Gan, G. Gomes and A. Bayen, “Estimation of performance metrics at signalized intersections using loop detector data and probe travel times,” *IEEE Transactions on Intelligent Transportation Systems*, submitted May 2016, T-ITS-16-05-0291, to appear 2017
3. S. Samaranyake, A. Parmentier, Y. Xuan, A. Bayen, “A mathematical framework for delay analysis in single source networks,” *Networks and Heterogeneous Media*, in press 2016
4. A. Allstrom, J. Ekstrom, D. Gundlegard, R. Ringdahl, C. Rydergren, A. Bayen, A. Patire, “Hybrid Approach for Short-Term Traffic State and Travel Time Prediction on Highways,” *Transportation Research Record*, 2554, pp.60-68, 2016, doi: 10.3141/2554-07
5. M. Jin, N. Bekiaris-Liberis, K. Weekly, C. Spanos, A. M. Bayen “Occupancy Detection via Environmental Sensing,” *IEEE Transactions on Automation Science and Engineering*, 2016 [T-ASE-2016-280]
6. J. Thai and A. Bayen, “Imputing a Variational Inequality Function or a Convex Objective Function: a Robust Approach,” *Journal of Mathematical Analysis and Applications*, JMAA-16-350R3, in press, 2016
7. M. Suarez Castillo, W. Krichene, A. Bayen, “On Social Optimal Routing Under Selfish Learning,” *IEEE Transactions on Control of Network Systems*, in press, submission number 16-0142, 2016
8. J. Thai, C. Yuan, and A. Bayen, “Resiliency of Mobility-as-a-Service Systems to Denial-of-Service Attacks,” *IEEE Transactions on Control Networked Systems*, in press, 16-0090, 2016
9. J. Reilly, S. Martin, M. Payer and A. Bayen, “Creating complex congestion patterns via multi-objective optimal freeway traffic control with application to cyber-security,” *Transportation Research, Part B*, pp. 366-382, vol. 91, Sep. 2016, doi:10.1016/j.trb.2016.05.017
10. A. Marzuoli, E. Boidot, P. Colomar, M. Guerpillon, E. Feron, A. Bayen, and M. Hansen, “Improving Disruption Management With Multimodal Collaborative Decision-Making: A Case Study of the Asiana Crash and Lessons Learned,” *IEEE Transactions on Intelligent Transportation Systems*, in press, pp. 1-19, Apr. 2016, doi: 10.1109/TITS.2016.2536733
11. A. Marzuoli, E. Boidot, Emmanuel; P. van Erp, A. Ucko, A. Bayen, E. Feron, and M. Hansen, “Multimodal Impact Analysis of an Airside Catastrophic Event, a Case Study of the Asiana Crash,” *IEEE Transactions on Intelligent Transportation Systems*, pp. 587 - 604, 17(2), Nov. 2015, doi: 10.1109/TITS.2015.2483743
12. A. Allstrom, J. Ekstrom, D. Gundlegard, R. Ringdahl, C. Rydergren, A. Bayen, A. Patire, “A hybrid approach for short-term traffic state and travel time prediction on highways,” *Transportation Research Record*, N0 2554, 2016, DOI: 10.3141/2554-07.
13. F. Belletti, M. Huo, X. Litrico, and A. Bayen, “Prediction of traffic convective instability with spectral analysis of the Aw-Rasclé-Zhang model,” *Physics Letters A*, pp. 2319-2330, 379(38), Oct. 2015. doi:10.1016/j.physleta.2015.05.019
14. C. Wu, J. Thai, S. Yadlowski, A. Pozdnukhov and A. Bayen, “Cellpath: fusion of cellular and traffic sensor data for route flow estimation via convex optimization,” *Transportation Research Part C*, pp. 111-128, vol. 59, Oct. 2015. doi:10.1016/j.trc.2015.05.004

15. J. Reilly, W. Krichene, S. Samaranayake, M.-L. Delle Monache, P. Goatin, “Adjoint-Based Optimization on a Network of Discretized Scalar Conservation Laws with Applications to Coordinated Ramp Metering,” *Journal of Optimization Theory and Applications*, pp. 733-760, 167(2), Nov. 2015, doi: 10.1007/s10957-015-0749-1
16. J. Reilly and A. Bayen, “Distributed Optimization for Shared State Systems: Applications to Decentralized Freeway Control via Subnetwork Splitting,” *IEEE Transactions on Intelligent Transportation Systems*, pp. 3465-3472, 16(6), June 2015. doi: 10.1109/TITS.2015.2430014
17. W. Krichene, B. Drighes and A. Bayen, “Online Learning of Nash Equilibria in Congestion Games,” *SIAM Journal on Control and Optimization*, pp. 1056-1081, 53(2), 2015. doi: 10.1137/140980685
18. A. Tinka, Q. Wu, K. Weekly, C. Oroza, J. Beard and A. Bayen, “Heterogenous Fleets of Active and Passive Floating Sensors for River Studies,” *Journal of Field Robotics*, pp. 1-21, Sep. 2015. doi: 10.1002/rob.21623
19. A. Patire, M. Wright, B. Prodhomme and A. M Bayen, “How much GPS data do we need?,” *Transportation Research – Part C*, pp. 325-342, vol. 58, Sep. 2015, 2015. doi:10.1016/j.trc.2015.02.011
20. Q. Wu and A. Bayen, “Variational Lagrangian Data Assimilation in Open Channel Networks,” *Water Resources Research*, pp. 1916-1938, 51(4), Apr. 2015. doi: 10.1002/2014WR015270
21. K. Weekly, N. Biekaris-Liberis, M. Jin, and A. Bayen, “Modeling and estimation of the humans’ effect on the CO2 dynamics inside a conference room,” *IEEE Transactions on Control Systems Technology*, pp. 1770-1781, 23(5), Sep. 2015. doi: 10.1109/TCST.2014.2384002
22. N. Biekaris-Liberis, and A Bayen, “Nonlinear Stabilization of a Viscous Hamilton-Jacobi PDE,” *IEEE Transactions on Automatic Control*, pp. 1698-1703, 60(6), Sep. 2014. doi: 10.1109/TAC.2014.2360653
23. J. Thai and A. Bayen, “State Estimation for Polyhedral Hybrid Systems and Applications to the Godunov Scheme,” *IEEE Transactions on Automatic Control*, pp. 311-326, July 2014, 60(2), doi: 10.1109/TAC.2014.2342151
24. K. Weekly, A. Tinka, L. Anderson and A. Bayen, “Autonomous River Navigation Using the Hamilton-Jacobi Framework for Underactuated Vehicles,” *IEEE Transactions on Robotics*, pp. 1250-1255, 30(5), June 2014. doi: 10.1109/TRO.2014.2327288
25. S. Dashti, J. Bray, J. Reilly, S. Glaser, A. Bayen and M. Ervasti, “Evaluating the Reliability of Mobile Phones as Seismic Monitoring Instruments,” *Earthquake Spectra Journal, Earthquake Engineering Research Institute, Earthquake Spectra*, 30(2), pp 1–22, 2014. doi:10.1193/091711EQS229M
26. A. Hofleitner, T. Rabbani, M. Rafiee, L. El Ghaoui and A. Bayen, “Learning and estimation applications of an online homotopy algorithm for a generalization of the LASSO,” *Discrete and Continuous Dynamical Systems*, pp. 502-523, 7(3), June 2014. doi: 10.3934/dcdss.2014.7.503
27. S. Samaranayake, J. Monteil, D. Holstius, E. Seto, S. Glaser, A. Bayen, “Real-time emissions estimation and dispersion modeling along the transportation network,” *Computer-Aided Civil and Infrastructure Engineering (CACAIE)*, pp 546-558, vol. 29, 2014. doi: 10.1111/mice.12078
28. T. Hunter, P. Abbeel and A. Bayen, “The Path Inference Filter: Model-Based Low-Latency Map Matching of Probe Vehicle Data,” *IEEE Transactions on Intelligent Transportation Systems*, pp. 507-529, 15(2), Oct. 2013. doi: 10.1109/TITS.2013.2282352
29. M. L. Delle Monache, J. Reilly, S. Samaranayake, W. Krichene, P. Goatin and A. Bayen, “A PDE-ODE model for a junction with ramp buffer,” *SIAM Journal on Applied Mathematics*, pp. 22739, 74(1), 2014. doi: 10.1137/130908993
30. E. Canepa, A. Bayen and C. Claudel, “Spoofing Cyber-Attack detection in probe-based traffic monitoring systems using mixed integer linear programming,” *Networks and Heterogeneous Media*, pp- 783-802, September 2013, 8(3), 2013 doi: 10.3934/nhm.2013.8.783
31. T. Hunter, T. Das, M. Zaharia, P. Abbeel, A. Bayen, “Large Scale Estimation in Cyberphysical Systems using Streaming Data: a Case Study with Smartphone Traces,” *IEEE Transactions on Automation Science and Engineering*, October 2013, 10(4), pp.884-898, doi:10.1109/TASE.2013.2274523
32. A. Hofleitner, T. Rabbani, M. Rafiee, S. Rosat, L. El Ghaoui and A. Bayen, “Online Homotopy Algorithm for a Generalization of the LASSO,” *IEEE Transactions on Automatic Control*, pp. 3175-3179, 58(12), Apr. 2013. doi: 10.1109/TAC.2013.2259373

33. A. Scacchioli, A. M. Bayen, and B. Stojadinović, “Assessment of uncertainty propagation in the dynamic response of single-degree-of-freedom structures using reachability analysis,” *ASCE Journal of Engineering Mechanics*, 140(6) June 2014. doi:10.1061/(ASCE)EM.1943-7889.0000676
34. W. Krichene, J. Reilly, S. Amin, and A. Bayen, “Stackelberg Routing on Parallel Networks With Horizontal Queues,” *IEEE Transactions on Automatic Control*, pp. 714-727, 59(3), March 2014, doi: 10.1109/TAC.2013.2289709
35. M. Rafiee, A. Barrau, and A. Bayen, “State estimation in large scale open channel networks using sequential Monte Carlo methods: optimal sampling importance resampling and implicit particle filters,” *Water Resources Research Journal*, 49, pp. 1-21, 2013, doi: 10.1029/2011WR011608.
36. J. Reilly, S. Dashti, M. Ervasti, J. Bray, S. Glaser, and A. Bayen, “Mobile phones as seismologic sensors: automating data extraction for the iShake system,” *IEEE Transactions on Automation Science and Engineering*, pp. 242-251, March 2013, 10(2), doi:10.1109/TASE.2013.2245121
37. C. Claudel, T. Chamoin, and A. Bayen, “Solutions to estimation problems for scalar Hamilton-Jacobi equations using Linear Programming,” *IEEE Transactions on Control Systems Technology*, pp. 273 - 280, 22(1), March 2013, doi:1109/TCST.2013.2238940
38. S. Blandin, J. Argote, A. Bayen, and D. Work, “Phase transition model of non stationary traffic: definition, properties and solution method,” *Transportation Research Part B*, 52, pp. 31-55, 2013, doi:10.1016/j.trb.2013.02.005.
39. S. Amin, X. Litrico, S. Sastry, A. Bayen, “Cyber Security of Water SCADA Systems?Part I: Analysis and Experimentation of Stealthy Deception Attacks,” *IEEE Transactions on Control Systems Technology*, pp. 1963-1970 21(5), Sep. 2012, doi: 10.1109/TCST.2012.2211873.
40. S. Amin, X. Litrico, S. Sastry, A. Bayen. “Cyber security of water SCADA systems: (II) attack detection using an enhanced hydrodynamic model,” *IEEE Transactions on Control Systems Technology*, pp. 1679-1693, 21(5), Sep. 2012, doi:10.1109/TCST.2012.2211874.
41. A. Tinka, M. Rafiee, and A. Bayen, “Floating sensor networks for river studies,” *IEEE Systems Journal*, 7(1), pp. 36-49, March 2013, doi:10.1109/JSYST.2012.2204914.
42. C. Oroza, A. Tinka, and A. Bayen, “Design of a network of robotic Lagrangian sensors for shallow water environments with multiple case studies,” *Journal of Mechanical Engineering Science, Part C*, pp. 1-18, February 2013, doi:10.1177/0954406213475947.
43. B. Hoh, T. Iwuchukwu, Q. Jacobson, M. Gruteser, A. Bayen, J.-C. Herrera, R. Herring, D. Work, M. Annavaram, and J. Ban, “Enhancing privacy and accuracy in probe vehicle based traffic monitoring via Virtual Trip Lines,” *IEEE Transactions on Mobile Computing*, 11(5) pp. 849–864, 2012, doi: 10.1109/TMC.2011.116.
44. P. Wang, T. Hunter, A. Bayen, K. Schechtner, and M. Gonzalez, “Understanding road usage patterns in urban areas,” *Nature Scientific Reports* 2, (1001), Dec. 2012, doi:10.1038/srep01001.
45. A. Hofleitner, R. Herring and A. Bayen, “Arterial travel time forecast with streaming data: a hybrid approach of flow modeling and machine learning,” *Transportation Research Part B*, 46(9), pp. 1097–1122, November 2012, doi:10.1016/j.trb.2012.03.006.
46. A. Hofleitner, R. Herring, P. Abbeel, and A. Bayen, “Learning the dynamics of arterial traffic from probe data using a Dynamic Bayesian Network,” *IEEE Transactions on Intelligent Transportation Systems*, 13(4), pp. 1679–1693, February 2012, doi:10.1109/TITS.2012.2200474.
47. D. Lovell, K. Vlachou, T. Rabbani and A. Bayen, “A diffusion approximation to a single airport queue,” *Transportation Research Part C*, 2012, doi: 10.1016/j.trc.2012.04.010
48. S. Blandin and A. Couque, A. Bayen, and D. Work, “On sequential data assimilation for scalar macroscopic traffic flow models,” *Physica D: Nonlinear Phenomena*, 241(17), pp. 1421-1440, September 2012, doi:10.1016/j.physd.2012.05.005.
49. S. Samaranyake, S. Blandin, and A. Bayen, “A tractable class of algorithms for reliable routing in stochastic networks,” *Transportation Research Part C*, 20(1), pp. 199-217, February 2012, doi:10.1016/j.trc.2011.05.009.
50. S. Amin, F. Hante and A. Bayen, “Exponential Stability of Switched Linear Hyperbolic Initial-Boundary Value Problems,” *IEEE Transactions on Automatic Control*, 57(2), pp. 291-301, February 2012, doi:10.1109/TAC.2011.2158171.

51. [A. Tinka](#), [T. Watteyne](#), [K. Pister](#), and [A. Bayen](#), “A Decentralized Scheduling Algorithm for Time Synchronized Channel Hopping,” *ICST Transactions on Mobile Communications and Applications*, 11(7-9), September 2011, doi:10.4108/icst.trans.mca.2011.e5.
52. [C. Claudel](#), [P.-E. Mazare](#) and [A. Bayen](#) “Analytical and grid-free solutions to the Lighthill-Whitham-Richards traffic flow model,” *Transportation Research Part B*, 45(10), pp. 1727-1748, December 2011, doi:10.1016/j.trb.2011.07.004.
53. [D. Sun](#) and [A. Bayen](#) “A dual decomposition method for sector capacity constrained traffic flow optimization,” [D. Sun](#), [A. Clinet](#), and [A. Bayen](#). *Transportation Research B*, 45(6), pp.880-902, March 2011, doi: 10.1016/j.trb.2011.03.004.
54. [C. Claudel](#) and [A. Bayen](#), “Convex formulations of data assimilation problems for a class of Hamilton-Jacobi equations,” *SIAM Journal on Optimization and Control*, 49(2), pp. 383-402, March 2011, doi:10.1137/090778754.
55. [S. Blandin](#), [D. Work](#), [P. Goatin](#), [B. Piccoli](#) and [A. Bayen](#), “A general phase transition model for vehicular traffic,” *SIAM Journal on Applied Mathematics*, 71(1), pp. 107-127, February 2011, doi:10.1137/090754467.
56. [A. Tinka](#), [I. Strub](#), [Q. Wu](#) and [A. Bayen](#), “Quadratic Programming based data assimilation with passive drifting sensors for shallow water flows,” *International Journal of Control*, 83(6), pp. 1686-1700. August 2010 doi:10.1080/00207179.2010.489621.
57. [C. Claudel](#) and [A. Bayen](#), “Lax-Hopf based incorporation of internal boundary conditions into Hamilton-Jacobi equation. Part I: Theory,” *IEEE Transactions on Automatic Control*, 55(5), pp. 1142-1157, May 2010 doi:10.1109/TAC.2010.2041976.
58. [C. Claudel](#) and [A. Bayen](#), “Lax-Hopf based incorporation of internal boundary conditions into Hamilton-Jacobi equation. Part II: Computational methods,” *IEEE Transactions on Automatic Control*, 55(5), pp. 1158-1174, May 2010, doi:10.1109/TAC.2010.2045439.
59. [D. Work](#), [S. Blandin](#), [O.-P. Tossavainen](#), [B. Piccoli](#) and [A. Bayen](#), “A distributed highway velocity model for traffic state reconstruction,” *Applied Mathematics Research eXpress (AMRX)*, 2010(1), pp. 1-35, April 2010, doi:10.1093/amrx/abq002.
60. [J.-C. Herrera](#), [D. Work](#), [X. Ban](#), [R. Herring](#), [Q. Jacobson](#) and [A. Bayen](#), “Evaluation of traffic data obtained via GPS-enabled mobile phones: the Mobile Century field experiment,” *Transportation Research – Part C*, 18, pp. 568-583, 2010, doi:10.1016/j.trc.2009.10.006. **Most cited article, Transportation Research – Part C, 2013, 2014. Most downloaded article, Transportation Research – Part C, 2013, 2014. Editor’s choice, 2016**
61. [J.-C. Herrera](#) and [A. Bayen](#), “Incorporation of Lagrangian measurements in freeway traffic state estimation,” *Transportation Research B*, 44(4), pp. 160-481, May 2010, doi:10.1016/j.trb.2009.10.005.
62. [J. Ban](#), [R. Herring](#), [P. Hao](#), and [A. Bayen](#), “Delay pattern estimation for signalized intersections using sampled travel times,” *Transportation Research Record*, No. 2130, pp. 109-119, 2009, doi:10.3141/2130-14.
63. [T. Rabbani](#), [S. Munier](#), [D. Dorchie](#), [P.-O. Malaterre](#), [A. Bayen](#) and [X. Litrico](#), “Flatness-based control of an irrigation canal using SCADA,” *IEEE Controls Systems Magazine*, 22(5), pp. 22-30, Oct. 2009, doi:10.1109/MCS.2009.933524.
64. [T. Rabbani](#), [F. Di Meglio](#), [X. Litrico](#) and [A. Bayen](#), “Feed-forward control of open channel flow using differential flatness,” *IEEE Transactions on Control Systems Technology*, 18(1), pp. 213-221, 2009, doi:10.1109/TCST.2009.2014640.
65. [E. Lobaton](#) and [A. Bayen](#), “Modeling and optimization analysis of a single-flagellum micro-structure through the method of regularized Stokeslets,” *IEEE Transactions on Control Systems Technology*, 2009, doi:10.1109/TCST.2008.2011889.
66. [I. Strub](#), [J. Percelay](#), [O.-P. Tossavainen](#) and [A. Bayen](#), “Comparison of two data assimilation algorithms for shallow water flows,” *Networks and Heterogeneous Media*, 4(2), pp. 409-430, 2009, doi:10.3934/nhm.2009.4.409.
67. [I. Strub](#), [J. Percelay](#), [M. Stacey](#) and [A. Bayen](#), “Inverse estimation of open boundary conditions in tidal channels,” *Ocean Modeling*, 2009, 29(1), pp. 85-93, doi:10.1016/j.ocemod.2009.03.002.
68. [Q. Wu](#), [X. Litrico](#) and [A. Bayen](#), “Data reconciliation of an open channel flow network using modal decomposition,” *Advances in Water Resources*, 2009, 32(2), pp. 193-204. doi:10.1016/j.advwatres.2008.10.009.
69. [D. Work](#) and [A. Bayen](#), “Convex formulations of air traffic flow optimization problems,” *Proceedings of the IEEE*, 2008, 96(12), pp. 2096-2112, doi:10.1109/JPROC.2008.2006150.
70. [J.-P. Aubin](#), [A. Bayen](#) and [P. Saint-Pierre](#), “Dirichlet problems for some Hamilton-Jacobi equations with inequality constraints,” *SIAM Journal on Control and Optimization*, 2008, 47(5), pp. 2348-2380, doi:10.1137/060659569.

71. D. Sun and A. Bayen, "A multicommodity Eulerian-Lagrangian large-capacity cell transmission model for en route traffic," *AIAA Journal of Guidance, Control and Dynamics*, 2007, 31(3), pp. 616-628, doi:10.2514/1.31717.
72. D. Sun, I. Strub and A. Bayen, "Comparison of the performance of four Eulerian network flow models for strategic air traffic management," *Networks and Heterogeneous Media*, 2007, 2(4), pp. 569-594, doi:10.3934/nhm.2009.2.569.
73. M. Oishi, I. Mitchell, A. Bayen and C. Tomlin, "Invariance-preserving abstractions of hybrid systems: Application to user-interface design," *IEEE Transactions on Control Systems Technology*, 2007, 16(2), pp. 229-244 doi:10.1109/TCST.2007.903370.
74. A. Bayen, I. Mitchell, M. Oishi and C. Tomlin, "Aircraft autolander safety through optimal control based reach set computation," *AIAA Journal on Guidance, Control and Dynamics*, January 2007, 30(1), pp. 68-77, doi:10.2514/1.21562.
75. I. Strub and A. Bayen, "Weak formulation of boundary conditions for scalar conservation laws: An application to highway traffic modeling," *International Journal on Robust and Nonlinear Control*, November 2006, 16(16), pp. 733-748, doi: 10.1002/rnc.1099.
76. A. Bayen, R. Raffard and C. Tomlin, "Adjoint-based control of a new Eulerian network model of air traffic flow," *IEEE Transactions on Control Systems Technology*, September 2006, 14(5), pp. 804-818, doi:10.1109/TCST.2006.876904.
77. I. Mitchell, A. Bayen and C. Tomlin, "A time dependent Hamilton-Jacobi formulation of reachable sets for continuous dynamic games," *IEEE Transactions on Automatic Control*, July 2005, 50(7), pp. 947-957, doi:10.1109/TAC.2005.851439.
78. A. Bayen, P. Grieder, G. Meyer and C. Tomlin, "Lagrangian delay predictive model for sector-based air traffic flow," *AIAA Journal on Guidance, Control, and Dynamics*, September 2005, 28(5), pp. 1015-1026, doi:10.2514/1.15242.
79. C. Tomlin, I. Mitchell, A. Bayen and M. Oishi, "Computational techniques for the verification of hybrid systems," *Proceedings of the IEEE*, 2003, 91(7), pp. 986-1001, doi:10.1109/JPROC.2003.814621.

In review

1. T. Seo, T. Kusakabe, Y. Asakura, "Traffic state estimation on highway: A comprehensive survey," *Annual Reviews in Control*, 2017
2. F. Belletti, D. Haziza, and A. Bayen, "Expert Level control of Ramp Metering based on Multi-task Deep Reinforcement Learning," *IEEE Intelligent Transportation Systems*.
3. W. Krichene, C. Boughiba, K. Lam and A. Bayen, "On Learning How Players Learn: Estimation of Learning Dynamics in The Routing Game," *ACM Transactions on Cyber-Physical Systems*, 2016, TCPS-2016-0069
4. L. Anderson, T. Pumur and A. Bayen, "Stability and Implementation of a Cycle-based Max Pressure Controller for Signalized Traffic Networks," *Networks and Heterogeneous Media*, 2016
5. C. Wu, A. Pozdnukhov, and A. Bayen, "Block simplex signal recovery: a method comparison and an application to routing," *ACM Transactions on Intelligent Systems and Technology*., 2016
6. S. Samaranyake, J. Reilly, W. Krichene, M.-L. Delle Monache, P. Goatin, A. Bayen, "Discrete-time system optimal dynamic traffic assignment (SO-DTA) with partial control for horizontal queuing networks," *Transportation Science*, 2014, TS-2014-0244

Conference publications

Engineering and computer science conferences (published, in press, accepted)

1. M. Balandat, W. Krichene, C. Tomlin, A. Bayen, "Minimizing Regret on Reflexive Banach Spaces and Nash Equilibria in Continuous Zero-Sum Games," NIPS 2016
2. W. Krichene, A. Bayen, P. Bartlett, "Adaptive Averaging in Accelerated Descent Dynamics," NIPS 2016
3. F. Belletti, E. Sparks, A. Bayen and J. Gonzalez, "Scalable Linear Causal Inference for Irregularly Sampled Time Series with Long Range Dependencies," NIPS workshop, 2016
4. T. Seo, T. Tchakian, S. Zhuk, and A. Bayen, "Filter comparison for estimation on discretized PDEs modeling traffic: Ensemble Kalman filter and Minimax filter," 2016 IEEE Conference on Decision and Control

5. J. Thai, N. Laurent-Boutry, A. Bayen, “Negative Externalities of GPS-Enabled Routing Applications: A Game Theoretical approach,” *19th IEEE Conference on Intelligent Transportation Systems*, to appear 2016
6. C. Wu, K. Shankari, E. Kamar, R. Katz, D. Culler, C. Papadimitriou, E. Horvitz, A. Bayen, “Optimizing the diamond lane: A more tractable carpool problem and algorithms,” *19th IEEE Conference on Intelligent Transportation Systems*, to appear 2016
7. S. Blandin, X. Litrico, B. Piccoli, A. Bayen, “Regularity and Lyapunov stabilization of weak entropy solutions to scalar conservation law,” *22nd International Symposium on Mathematical Theory of Networks and Systems (MTNS)*, to appear, 2016
8. F. Belletti, M. Huo, X. Litrico, A. Bayen, “Characterization of the convective instability of the Aw-Rascle-Zhang model via spectral analysis”, to appear, *American Control Conference*, 2016
9. K. Lam, W. Krichene and A. Bayen, “Learning How Players Learn: Estimation of Learning Dynamics in the Routing Game,” *International Conference on Cyber Physical Systems (ICCPS)*, Vienna, Austria, 2016. doi: 10.1109/ICCPS.2016.7479108
10. C. Yuan, J. Thai and A. Bayen, “ZUbers against ZLYfts Apocalypse: An Analysis Framework for DoS Attacks on Mobility-as-a-Service Systems,” *International Conference on Cyber Physical Systems (ICCPS)* Vienna, Austria, 2016. doi: 10.1109/ICCPS.2016.7479132
11. A. Allstrom, J. Ekstrom, D. Gundlegard, R. Ringdahl, C. Rydergren, A. Bayen, A. Patire, “A hybrid approach for short-term traffic state and travel time prediction on highways,” *Transportation Research Board*, Washington, DC, Paper 16-0457, 2016. doi: 10.3141/2554-07
12. W. Krichene, A. Bayen and Peter Bartlett, “Accelerated Mirror Descent in Continuous and Discrete Time,” *Advances in Neural Information Processing Systems (NIPS)*, pp. 2845-2853, Montreal, CA, 2015
13. S. Krichene, W. Krichene, R. Dong, A. Bayen, “Convergence of Heterogeneous Distributed Learning in Stochastic Routing Games,” *53rd Annual Allerton Conference on Communication, Control, and Computing*, pp. 480 - 487, Monticello, IL, 2015. doi: 10.1109/ALLERTON.2015.7447043
14. R. Dong, W. Krichene, A. Bayen, and S. Sastry, “Differential Privacy of Populations in Routing Games,” *IEEE Conference on Decision and Control*, pp. 2798 - 2803, Osaka, Japan, Dec. 2015. doi: 10.1109/CDC.2015.7402640
15. J. Thai, C. Wu, A. Pozdnoukhov and A. Bayen, “Convex programming on the l1-ball and on the simplex via isotonic regression,” *IEEE Conference on Decision and Control*, pp. 2031-2036, Osaka, Japan, Dec. 2015. doi: 10.1109/CDC.2015.7402505
16. C. Le Floch, F. Belletti, S. Saxena, A. Bayen, and S. Moura, “Distributed Optimal Charging of Electric Vehicles for Demand Response and Load Shaping”, *IEEE Conference on Decision and Control*, pp. 6570-6576, Osaka, Japan, Dec. 2015. doi: 10.1109/CDC.2015.7403254
17. F. Belletti, C. Le Floch, S. Moura, A. Bayen, “Privacy-preserving dual splitting distributed optimization with Application to load flattening in California,” *IEEE Conference on Decision and Control*, pp. 3355-3360, Osaka, Japan, Dec. 2015. doi: 10.1109/CDC.2015.7402724
18. W. Krichene, M. Balandat, C. Tomlin and A. Bayen, “The Hedge Algorithm on a Continuum”, *Proceedings of The 32nd International Conference on Machine Learning, 2015 (ICML)*, pp. 824-832, Lille, France, 2015. ISBN 9781510810587
19. P.-O. Lamare, N. Bekiaris-Liberis and A. Bayen, “Control of 2×2 Linear Hyperbolic Systems: Backstepping-Based Trajectory Generation and PI-Based Tracking,” *European Control Conference*, pp. 497-502 Linz, Austria, July 2015. doi: 10.1109/ECC.2015.7330592
20. W. Krichene, S. Krichene, A. Bayen, “Convergence of Mirror Descent Dynamics in the Routing Game”, *European Control Conference*, pp. 569-574, Linz, Austria, July 2015. doi: 10.1109/ECC.2015.7330604
21. S. Samaranayake, A. Parmentier, E. Xuan, A. Bayen, “Solving the user equilibrium departure time problem at an off-ramp with incentive compatible cost functions,” *European Control Conference*, Linz, Austria, July 2015. doi:
22. J. Thai, R. Harriss and A. Bayen, “Approximate bilevel programming via pareto optimization for imputation and control of optimization and equilibrium models,” *European Control Conference*, pp. 322-327, Linz, Austria, July 2015. doi: 10.1109/ECC.2015.7330564

23. M. Jin, N. Bekiaris-Liberis, K. Weekly, C. Spanos, A. Bayen, "Sensing by Proxy: Occupancy Detection Based on Indoor CO₂ Concentration," Ninth International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies (UBICOMM), 2015. ISBN: 978-1-61208-418-3, ISSN 2308-4278 **Best Paper Award**
24. C. Wu, J. Thai, S. Yadlowski, A. Pozdnukhov and A. Bayen, "Cellpath: fusion of cellular and traffic sensor data for route flow estimation via convex optimization," *International Symposium on Transportation and Traffic Theory (ISTTT)*, archived in *Transportation Research - Part C*, vol. 59, Oct. 2015, pp. 111-128, doi: 10.1016/j.trc.2015.05.004
25. J. Thai, R. Hariss and A. Bayen, "A Multi-Convex approach to Latency Inference and Control in Traffic Equilibria from Sparse data," *American Control Conference*, pp. 689-695, Chicago, IL, June 2015. doi: 10.1109/ACC.2015.7170815
26. A. Parmentier, S. Samaranayake, Y. Xuan and A. Bayen, "A mathematical framework for delay analysis in single source networks", *American Control Conference*, pp. 4603-4609, Chicago, IL, June 2015. doi: 10.1109/ACC.2015.7172054
27. J. Reilly and A. Bayen, "Distributed Optimization for Shared State Systems: Applications to Decentralized Freeway Control via Subnetwork Splitting", *American Control Conference*, pp. 4771-4778, Chicago, IL, June 2015. doi: 10.1109/ACC.2015.7172081
28. T. Pumar, L. Anderson, and A. Bayen, "Stability of Modified Max Pressure Controller with Application to Signalized Traffic Networks," *American Control Conference*, pp.1879-1886, Chicago, IL, June 2015. doi: 10.1109/ACC.2015.7171007
29. S. Samaranayake, W. Krichene, J. Reilly, J.-B. Lespiau, M. L. Delle Monache, P. Goatin, A. Bayen, "Discrete-time system optimal dynamic traffic assignment (SO-DTA) with partial control for horizontal queuing networks," by Samitha Samaranayake", *American Control Conference*, pp.663-670, Chicago, IL, June 2015. doi: 10.1109/ACC.2015.7170811
30. T. Hunter, J. Thai, K. Akametalu, C. Tomlin and A. Bayen, "Inverse Covariance Estimation from Data with Missing Values using the Concave-Convex procedure", *IEEE Conference on Decision and Control*, pp. 5736-5742, Los Angeles, CA, Dec. 2014 doi: 10.1109/CDC.2014.7040287
31. N. Biekaris-Liberis, and A. Bayen, "Nonlinear Stabilization of a Viscous Hamilton-Jacobi PDE," *IEEE Conference on Decision and Control*, pp. 2858-2863, Los Angeles, CA, Dec. 2014 doi: 10.1109/CDC.2014.7039828
32. K. Weekly, N. Biekaris-Liberis, and A. Bayen, "Modeling and Estimation of the Humans? Effect on the CO₂ Dynamics Inside a Conference Room," *IEEE Conference on Decision and Control*, pp. 1301-1306, Los Angeles, CA, Dec. 2014 doi: 10.1109/CDC.2014.7039561
33. B. Drighes, W. Krichene and A. Bayen, "Stability of Nash equilibria in the congestion game under Replicator dynamics," *IEEE Conference on Decision and Control*, pp. 1923-1929, Los Angeles, CA, Dec. 2014 doi: 10.1109/CDC.2014.7039679
34. B. Drighes, W. Krichene, A. Bayen, "On the convergence of no regret learning in selfish routing," *International Conference on Machine Learning (ICML)*, pp. 163-171, Beijing, China, June 2014. ISBN 9781634393973
35. M. Han, H. Zou, K. Weekly, R. Jia, A. Bayen and C. Spanos, "Environmental sensing by wearable device for indoor activity and location estimation," *International Conference of the IEEE Industrial Electronics Society (IECON)*, pp. 5369-5375, Dallas, TX, October 2014. doi: 10.1109/IECON.2014.7049320
36. H. Zou, K. Weekly, X. Lie and A. Bayen, "Indoor occupant positioning system using active RFID deployment and particle filters," *9th IEEE International Conference on Distributed Computing in Sensor Systems*, pp. 35-42, Marina Del Rey, CA, 2014. doi: 10.1109/DCOSS.2014.53
37. L. Anderson, E. Canepa, R. Horowitz, C. Claudel and A. Bayen, "Optimization-based queue estimation on an arterial traffic link with measurement uncertainties", *TRB 93rd Annual Meeting*, Paper 14-4570, Washington, DC, 2014. doi:
38. G. Sabran, S. Samaranayake and A. Bayen "Precomputation techniques for the stochastic on-time arrival problem," *SIAM Meeting on Algorithm Engineering and Experimentation (ALENEX 2014)*, Portland OR, 2014. doi: 10.1137/1.9781611973198.13
39. Y. Jebbari, W. Krichene, J. Reilly and A. Bayen, "Stackelberg Thresholds on Parallel Networks with Horizontal Queues," *52nd IEEE Conference on Decision and Control*, Dec. 2013, Florence, Italy
40. K. Weekly D. Rim, L. Zhang, A. Bayen, B. Nazaroff, C. Spanos, "Low-Cost Coarse Airborne Particulate Matter Sensing for Indoor Occupancy Detection," *9th IEEE International Conference on Automation Science and Engineering*, pp. 32-37, August 17-21, 2013, Madison, WI. doi: 10.1109/CoASE.2013.6653970 **Best Paper Award**
41. S. Liu, Y. Long, L. Xie, A. Bayen, "Cooperative Control of Air Flow for HVAC Systems," *9th IEEE International Conference on Automation Science and Engineering*, pp. 422 - 427, August 17-21, 2013, Madison, WI. doi: 10.1109/CoASE.2013.6654001

42. F. Farokhi, W. Krichene, A. Bayen, K.-H. Johansson, “A Heterogeneous Routing Game,” *51st Annual Allerton Conference on Communication, Control, and Computing*, pp. 448-455, Monticello, IL, October 2013. doi; 10.1109/Allerton.2013.6736559
43. J. Thai, A. Bayen, “State Estimation for Polyhedral Hybrid Systems and Applications to the Godunov Scheme,” *Hybrid Systems Computation and Control (HSCC)*, Philadelphia, PA, 2013, pp. 143-152, doi:10.1145/2461328.2461354
44. J. Thai, A. Bayen, “State Estimation for the discretized LWR PDE using explicit polyhedral representations of the Godunov scheme,” *American Control Conference*, pp. 2428-2435, Washington, DC, June 2013. doi: 10.1109/ACC.2013.6580198
45. E. Bulteau, R. Leblanc, S. Blandin, and A. Bayen, “Traffic flow estimation using higher-order speed statistics,” *92th Annual Meeting of the Transportation Research Board, 2013*, Washington, D.C., Paper 13-3307, Jan. 2013.
46. W. Krichene, J. Reilly, S. Amin, and A. Bayen, “On the characterization and computation of Nash equilibria on parallel networks with horizontal queues,” *51st IEEE Conference on Decision and Control (CDC)*, 2012, pp. 7119-7125, 2012, doi:10.1109/CDC.2012.6426543
47. W. Krichene, J. Reilly, S. Amin, and A. Bayen, “On Stackelberg routing on parallel networks with horizontal queues,” *51st IEEE Conference on Decision and Control (CDC)*, 2012, pp. 7126-7132, doi:10.1109/CDC.2012.6426526
48. A. Hofleitner, C. Claudel and A. Bayen, “Probabilistic formulation of estimation problems for a class of Hamilton-Jacobi equations,” *51st IEEE Conference on Decision and Control*, 2012, pp. 3531-3537, doi:10.1109/CDC.2012.6426316
49. J. Beard, K. Weekly, C. Oroza, A. Tinka and A. Bayen, “Mobile phone based drifting flow sensors,” *2012 IEEE 3rd International Conference on Networked Embedded Systems for Every Application (NESEA)*, Liverpool, UK, pp. 1-7, December 2012, doi:10.1109/NESEA.2012.6474008
50. T. Hunter, P. Abbeel, A. Bayen. “The path inference filter: model-based low-latency map matching of probe vehicle data”. *In the 10th International Workshop on the Algorithmic Foundations of Robotics (WAFR)*, 2012, doi:10.1007/978-3-642-36279-8-36
51. S. Samaranyake, S. Blandin and A. Bayen, “Speedup techniques for the stochastic on-time arrival problem,” *12th Workshop on Algorithmic Approaches for Transportation Modelling, Optimization, and Systems*, Ljubljana, Slovenia, pp. 83–96, September 2012, doi:10.4230/OASiCS.ATMOS.2012.83
52. A. Hofleitner, E. Come, L. Oukhellou, J-P Lebacque and A. Bayen, “Automatic signal detection leveraging sparsely sampled probe vehicles,” *IEEE Conference on Intelligent Transportation Systems (ITSC)*, Anchorage, AK, pp. 1687-1692, September 2012, doi:10.1109/ITSC.2012.6338641
53. S. Blandin, P. Goatin, B. Piccoli, A. Bayen, and D. Work, “A general phase transition model for traffic flow on networks,” *Euro Working Group on Transportation, Energy Efficient Transportation Networks*, Paris, France, September 2012, doi:10.1016/j.sbspro.2012.09.749.
54. A. Hofleitner, C. Claudel, and A. Bayen, “Reconstruction of boundary conditions from internal conditions using viability theory,” *American Control Conference (ACC)*, Montreal, Canada, pp. 640-645, June 2012.
55. M. Rafiee and A. Barrau and A. Bayen, “State estimation in networks of open channels using particle filters,” *American Control Conference*, June 2012, Montreal, Canada.
56. S. Blandin, A. Salam, A. Bayen, “Individual speed variance in traffic flow: analysis of Bay Area radar measurements,” *91st Transportation Research Board Annual Meeting*, Number 12-0798, Washington D.C., January 2012.
57. A. Hofleitner, R. Herring and A. Bayen, “Probability distributions of travel times on arterial networks: a traffic flow and horizontal queuing theory approach,” *91st Transportation Research Board Annual Meeting*, Number 12-0798, Washington D.C., January 2012.
58. A. Hofleitner, R. Herring, A. Bayen, Y. Han, F. Moutarde and A. de La Fortelle, “Large scale estimation of arterial traffic and structural analysis of traffic patterns using probe vehicles,” *91st Transportation Research Board Annual Meeting*, Number 12-0598, Washington D.C., January 2012.
59. C. Bails, A. Hofleitner, Y. Xuan and A. Bayen, “A three-stream model for arterial traffic,” *91st Transportation Research Board Annual Meeting*, Number 12-1212, Washington D.C., January 2012.
60. P.-E. Mazare, O.-P. Tossavainen, A. Bayen, and D. Work, “Trade-offs between inductive loops and GPS probe vehicles for travel time estimation: A Mobile Century case study,” *Transportation Research Board 91st Annual Meeting*, Washington, D.C., Jan. 22–26, 2012.

61. S. Samaranayake, S. Blandin and A. Bayen, "Learning the dependency structure of highway networks for traffic forecast," *2011 50th IEEE Conference on Decision and Control and European Control Conference (CDC-ECC)*, Orlando, FL, pp. 5983-5988, December 2011, doi:10.1109/CDC.2011.6161510.
62. A. Hofleitner, L. El Ghaoui, A. Bayen, "Online least-squares estimation of time varying systems with sparse temporal evolution and application to traffic estimation," *50th IEEE Conference on Decision and Control and European Control Conference*, pp. 2595-2601, Atlanta, FL, December 2011, doi:10.1109/CDC.2011.6160832.
63. T. Hunter, T. Moldovan, S. Merzgui, J. Ma and M. Franklin, P. Abbeel and A. Bayen, "Scaling the mobile millennium system in the cloud," *Proceedings of the 2nd ACM Symposium on Cloud Computing (SOCC)*, 2011. ACM, New York, NY, doi:10.1145/2038916.2038944.
64. M. Ervasti, S. Dashti, J. Reilly, J. Bray, A. Bayen and S. Glaser, "iShake: mobile phones as seismic sensors—user study findings," *Proceedings of the 10th International Conference on Mobile and Ubiquitous Multimedia*, pp. 43-52, 2011, doi:10.1145/2107596.2107601.
65. A. Hofleitner, R. Herring and A. Bayen, "Optimal decomposition of travel times measured by probe vehicles using a statistical traffic flow model," *IEEE Conference on Intelligent Transportation Systems (ITSC)*, Washington, DC, pp. 815-821, October 2011, doi:10.1109/ITSC.2011.6083050.
66. P. Borokhov, S. Blandin, S. Samaranayake, O. Goldschmidt, and A. Bayen, "An adaptive routing system for location-aware mobile devices on the road network," In *IEEE Conference on Intelligent Transportation Systems (ITSC)*, Washington, DC, pp. 1839-1845, October 2011, doi:10.1109/ITSC.2011.6083021.
67. A. Allstrom, J. Archerb, A. Bayen, S. Blandin, J. Butler, D. Gundlegard H. Koutsopoulos, J. Lundgren, M. Rahmani, O.-P. Tossavainen, "Mobile Millennium Stockholm," *2nd International Conference on Models and Technologies for ITS*, Leuven, Belgium, June 22-24, 2011.
68. S. Samaranayake, S. Blandin and A. Bayen, "A tractable class of algorithms for reliable routing in stochastic networks," *International Symposium on Transportation and Traffic Theory (ISTTT), Procedia Social and Behavioral Sciences 17*, pp. 341-363, 2011. [AR: 7.2%] doi:10.1016/j.sbspro.201104.521.
69. M. Rafiee and A. Tinka and J. Thai and A. Bayen, "Combined state-parameter estimation for shallow water equations," *Proceedings of the American Control Conference*, San Francisco, CA, pp. 1333-1339, June 2011.
70. K. Weekly, L. Anderson, A. Tinka, and A. Bayen, "Autonomous river navigation using the Hamilton-Jacobi framework for underactuated vehicles," In *Proc. IEEE Conf. Robotics and Automation (ICRA)*, Shanghai, China, pp. 828-833, May 2011, doi:10.1109/ICRA.2011.5980388.
71. M. Rafiee, and A. Bayen, "Optimal network topology design in multi-agent systems for efficient average consensus," *49th IEEE Conference on Decision and Control*, pp. 3877 - 3883, Atlanta, GA, December 15-17, 2010 doi:10.1109/CDC.2010.5717719.
72. S. Blandin, X. Litrico and A. Bayen, "Boundary stabilization of the inviscid Burgers equation using a Lyapunov method," *49th IEEE Conference on Decision and Control*, pp.1705-1712, Atlanta, GA, December 15-17, 2010 doi:10.1109/CDC.2010.5717716. **Best Paper Award finalist.**
73. S. Dashti, J. Reilly, J. Bray, A. Bayen, S. Glaser and M. Ervasti, "iShake: Mobile Phones as Seismic Sensors," *AGU Fall Meeting Abstracts*, 2010.
74. R. Herring, A. Hofleitner, P. Abbeel and A. Bayen "Estimating arterial traffic conditions using sparse probe data," *13th IEEE Intelligent Transportation System Conference (ITSC)*, Madeira, Portugal, pp. 929-936, September 2010, doi:10.1109/ITSC.2010.5624994.
75. C. Claudel and A. Bayen, "Linear and quadratic programming formulations of data assimilation or data reconciliation problems for a class of Hamilton-Jacobi equations," *American Control Conference*, Baltimore, MD, June 30-July 02, 2010.
76. S. Amin, X. Litrico, S. Sastry and A. Bayen, "Stealthy deception attacks on water SCADA systems," *13th ACM international conference on Hybrid systems: computation and control*, pp. 161-170, CPS Week, Stockholm, 13-16 April, 2010, doi:acm.org/10.1145/1755952.1755976.
77. R. Herring, A. Hofleitner, S. Amin, T. Nasr, A. Khalek, P. Abbeel, A. Bayen, "Using mobile phones to forecast arterial traffic through statistical learning," *89th Transportation Research Board Annual Meeting*, Washington D.C., January 10-14, 2010.

78. S. Blandin, D. Work, P. Goatin, B. Piccoli and A. Bayen, “A class of perturbed cell transmission models to account for traffic variability,” *89th Transportation Research Board Annual Meeting*, Washington D.C., January 10-14, 2010.
79. J. Jariyasunant, D. Work, B. Kerkez, R. Sengupta, S. Glaser, and A. Bayen, “Mobile transit trip planning with real-time data,” *89th Transportation Research Board Annual Meeting*, Washington, D.C., Jan. 10-14, 2010.
80. S. Blandin, L. El Ghaoui and A. Bayen, “Kernel regression for travel-time estimation via convex optimization,” *2009 IEEE Conference on Decision and Control*, Shanghai, China, Dec. 2009. doi:10.1109/CDC.2009.5400534.
81. Q. Wu, M. Rafiee, A. Tinka and A. Bayen, “Inverse modeling for open boundary conditions in channel network,” *Proceedings of the Joint 48th IEEE Conference on Decision and Control and 28th Chinese Control Conference*, Shanghai, China, pp. 8258-8265, December 2009, doi:10.1109/CDC.2009.5400445.
82. A. Tinka, I. Strub, Q. Wu, and A. Bayen, “Quadratic programming based data assimilation with passive drifting sensors for shallow water flows,” *Proceedings of the Joint 48th IEEE Conference on Decision and Control and 28th Chinese Control Conference*, Shanghai, P.R. China, pp. 7614-7620, December 2009, doi:10.1109/CDC.2009.5399663.
83. M. Rafiee, Q. Wu and A. Bayen, “Kalman filter based estimation of flow states in open channels using Lagrangian sensing,” *2009 IEEE Conference on Decision and Control*, Shanghai, China, Dec. 2009.
84. J.-P. Aubin, A. Bayen, P. Saint-Pierre, “Dirichlet problems for some Hamilton-Jacobi equations with inequality constraints,” *2009 IEEE Conference on Decision and Control*, Shanghai, China, Dec. 2009.
85. C. Claudel and A. Bayen, “Kernel regression for travel-time estimation via convex optimization,” *2009 Allerton Conference on Communication and Control*, Sep. 2009.
86. T. Hunter, R. Herring, P. Abbeel, A. Bayen, “Path and travel time inference from GPS probe vehicle data,” *Neural Information Processing Systems foundation (NIPS)*, Vancouver, Canada, December 2009.
87. C. G. Claudel, M. Nahoum and A. M. Bayen, “Minimal error certificates for detection of faulty sensors using convex optimization,” in *Proceedings of the 47th Annual Allerton Conference on Communication, Control, and Computing*, Allerton, IL, Oct. 2009. doi:allerton.2009.5394554
88. X. Ban, R. Herring, J.-D. Margulici, A. Bayen, “Optimal sensor placement for freeway travel time estimation,” *18th International Symposium on Transportation and Traffic Theory (ISTTT)*, July 2009.
89. S. Blandin, D. Work, P. Goatin, B. Piccoli and A. Bayen, “A general phase transition model for traffic flow on networks,” *2009 IFAC workshop on Control of Distributed Parameter Systems*, Toulouse, France, July 20–24 2009. doi:10.1016/j.sbspro.2012.09.749 [DOI IS WRONG].
90. D. Work, O.-P. Tossavainen, Q. Jacobson, and A. Bayen, “Lagrangian Sensing: Traffic Estimation with Mobile Devices,” *Proceedings of the 2009 American Control Conference*. pp. 1536–1543, St. Louis, MO, June 10–12, 2009. doi:10.1109/ACC.2009.5160332.
91. A. Tinka, S. Diemer, L. Madureira, E. Marques, J. de Sousa, R. Martins, J. Pinto, J. da Silva, A. Sousa, P. Saint-Pierre, and A. Bayen, “Viability-based computation of spatially constrained minimum time trajectories for an autonomous underwater vehicle: implementation and experiments,” *Proceedings of the American Control Conference*, St. Louis, MO, pp. 3603-3610, June 2009, doi:10.1109/ACC.2009.5160166.
92. C. Claudel, A. Hofleitner, N. Mignerey and A. Bayen, “Guaranteed bounds on highway travel times using probe and fixed data,” *88th Transportation Research Board Annual Meeting*, Washington D.C., January 2009.
93. X. Ban, R. Herring, P. Hao and A. Bayen, “Delay pattern estimation for signalized intersections using sampled travel times,” *88th Transportation Research Board Annual Meeting*, January 2009.
94. D. Work, O.-P. Tossavainen, S. Blandin, A. Bayen, T. Iwuchukwu and K. Tracton, “An ensemble Kalman filtering approach to highway traffic estimation using GPS enabled mobile devices,” *Proceedings of the 47th IEEE Conference on Decision and Control*, December 2008, pp. 5062-5068. doi:10.1109/CDC.2008.4738999
95. O.-P. Tossavainen, J. Percelay, A. Tinka, Q. Wu and A. Bayen, “Ensemble Kalman filter based state estimation in 2D shallow water equations using Lagrangian sensing and state augmentation,” *Proceedings of the 47th IEEE Conference on Decision and Control*, December 2008, pp. 1783-1790.
96. S. Amin, F. Hante and A. Bayen, “Stability analysis of linear hyperbolic systems with switching parameters and boundary conditions,” *Proceedings of the 47th IEEE Conference on Decision and Control*, December 2008, pp. 2081-2086.

97. F. Di Meglio, T. Rabbani, X. Litrico and A. Bayen, "Feed-forward river flow control using differential flatness," *Proceedings of the 47th IEEE Conference on Decision and Control*, December 2008, pp. 3895-3902.
98. D. Work and A. Bayen, "Convex formulations of aggregate network air traffic flow optimization problems," *Proceedings of the 47th IEEE Conference on Decision and Control*, December 2008, pp. 2141-2147. doi:10.1109/CDC.2008.4739033
99. Q. Wu, X. Litrico and A. Bayen, "Data reconciliation of an open channel flow network using modal decomposition," *Proceedings of the 47th IEEE Conference on Decision and Control*, December 2008, pp. 3903-3910.
100. C. Whyte, A. Scacchioli, A. M. Bayen, and B. Stojadinović, "Assessment of quality of hybrid simulation using reachability analysis," in *Proceedings of the 14th Conference on Earthquake Engineering*, paper no. S16-02-009 (Beijing, China), October 12-17, 2008
101. C. Claudel and A. Bayen, "Guaranteed bounds on traffic flow parameters estimation using mixed Eulerian and Lagrangian data," in *Proceedings of the 46th Annual Allerton Conference on Communication, Control, and Computing*, Allerton, IL, Sep. 2008. doi:ALLERTON.2008.4797618
102. R. Hoffman, D. Sun, A. Clinet, S. Augustine, J. Burke, R. Viswanathan and A. Bayen, "Integration of an aggregate flow model with a traffic flow simulator," *Proceedings of the AIAA Conference on Guidance, Control and Dynamics*, August 2008, AIAA Paper 2008-6325.
103. B. Hoh, M. Gruteser, R. Herring, J. Ban, D. Work, J.-C. Herrera, A. Bayen, M. Annavaram and Q. Jacobson, "Virtual trip lines for distributed privacy preserving traffic monitoring," *Mobile Systems and Applications (MOBISYS)*, June 17-18 2008, Breckenridge, CO. [AR 18%]. doi:10.1145/1378600.1378604
104. S. Amin, F. Hante and A. Bayen, "On stability of switched linear hyperbolic conservation laws with reflecting boundaries," *Hybrid Systems: Computation and Control (M. Egerstedt and B. Mishra, Eds.)*, Lecture Notes in Computer Science 4981, pp. 602-605, Springer-Verlag, March 2008.
105. C. Claudel and A. Bayen, "Solutions to switched Hamilton-Jacobi equations and conservation laws using hybrid component," *Hybrid Systems: Computation and Control (M. Egerstedt and B. Mishra, Eds.)*, Lecture Notes in Computer Science 4981, pp. 101-115, Springer-Verlag, March 2008. doi: 10.1007/978-3-540-78929-1-8
106. J.-C. Herrera and A. Bayen, "Traffic flow reconstruction using mobile sensors and loop detector data," *Transportation Research Board*, January 2008.
107. Q. Wu, S. Amin, S. Munier, A. Bayen, X. Litrico and G. Belaud, "Parameter identification for the shallow water equations using finite spectrum signal," *Proceedings of the 46th IEEE Conference on Decision and Control*, December 2007, pp. 1584- 1590.
108. S. Amin, A. Bayen, L. El Ghaoui and S. Sastry, "Robust feasibility for control of water flow in a reservoir-canal system," *Proceedings of the 46th IEEE Conference on Decision and Control*, December 2007, pp. 1571- 1577.
109. A. Bayen, C. Claudel and P. Saint-Pierre, "Computations of solutions to the Moskowitz Hamilton-Jacobi-Bellman equation under viability constraints," *Proceedings of the 46th IEEE Conference on Decision and Control*, December 2007, pp. 4737- 4743.
110. S. Martinez, G. Chatterji, D. Sun and A. Bayen, "A weighted graph approach airspace dynamic configuration," *Proceedings of the 2007 AIAA Conference on Guidance, Navigation and Control*, AIAA-2007-6448, August 2007.
111. J. Pannequin, A. Bayen, H. Chung, I. Mitchell and S. Sastry, "Multiple aircraft deconflicted path planning with weather avoidance constraints," *Proceedings of the 2007 AIAA Conference on Guidance, Navigation and Control*, AIAA-2007-6588, August 2007.
112. E. Lobaton and A. Bayen, "Modeling and optimization analysis of a single flagellum bacterial motion," *Proceedings of the 2007 American Control Conference*, New York, NY, pp. 455-461, July 2007.
113. A. Scacchioli, A. Bayen, B. Stojadinovic and S. Takhirov, "Quality of hybrid simulation: how good was your test? A reachability analysis approach," *Proceedings of the 18th Engineering Mechanics Division Conference (EMD2007)*, Blacksburg, VA, June 2007.
114. A. Bayen, C. Claudel and P. Saint-Pierre, "Viability-based computations of solutions to the Hamilton-Jacobi-Bellman equation," *Hybrid Systems: Computation and Control (A. Bemporad, A. Bicchi, G. Buttazzo, Eds.)*, Lecture Notes in Computer Science 4416, pp. 645-649, Springer-Verlag, March 2007. doi: 10.1007/978-3-540-71493-4-52
115. I. Strub and A. Bayen, "Continuous adjoint methods for air traffic flow management," *Proceedings of the 45th IEEE Conference on Decision and Control*, San Diego, CA, pp. 101-106, December 2006.

116. I. Strub and A. Bayen, "Optimal control of air traffic networks using continuous flow models," *Proceedings of the AIAA Conference on Guidance, Navigation and Control*, AIAA Paper2006-6228, August 2006.
117. D. Sun, S. Yang, I. Strub, A. Bayen, B. Sridhar and K. Sheth, "Eulerian Trilogy," *Proceedings of the AIAA Conference on Guidance, Navigation and Control*, AIAA Paper 2006-6227, August 2006.
118. C. Robelin, D. Sun, G. Wu and A. Bayen, "MILP control of aggregate Eulerian network airspace models," *Proceedings of the 2006 American Control Conference*, pp. 5257-5262, June 2006.
119. I. Strub and A. Bayen, "Mixed initial-boundary value problems for scalar conservation laws: application to the modeling of transportation networks," *Hybrid Systems: Computation and Control* (J. Hespanha, A. Tiwari, Eds.), Lecture Notes in Computer Science 3927, pp. 552-567, Springer-Verlag, March 2006.
120. J.-P. Aubin, A. Bayen and P. Saint-Pierre, "A viability approach to Hamilton-Jacobi equations: application to concave highway traffic flux functions," *Proceedings of the 44th IEEE Conference on Decision and Control and European Control Conference*, pp. 3519-3524, December2005.
121. K. Roy, A. Bayen and C. Tomlin, "Polynomial time algorithms for scheduling of arrival aircraft," *Proceedings of the AIAA Conference on Guidance, Navigation and Control*, AIAA Paper 2005-6044, August 2005.
122. R. Raffard, S. Waslander, A. Bayen and C. Tomlin, "Cooperative distributed control for a multi-agent Eulerian air traffic network," *Proceedings of the AIAA Conference on Guidance, Navigation and Control*, AIAA Paper 2005-6050, August 2005.
123. J.-P. Aubin, A. Bayen and P. Saint-Pierre, "Computation and control of solutions to the Burgers equation using viability theory," *Proceedings of the 2005 American Control Conference*, pp. 3906-3911, June 2005.
124. A. Bayen, C. Tomlin, Y. Ye and J. Zhang, "An approximation algorithm for scheduling aircraft with holding time," *Proceedings of the 43rd IEEE Conference on Decision and Control*, pp. 2760-2767, December 2004.
125. A. Bayen, C. Tomlin, T. Callantine, Y. Ye and J. Zhang, "Optimal arrival traffic spacing via dynamic programming," *Proceedings of the AIAA Conference on Guidance, Navigation and Control*, AIAA Paper 2004-5228, August 2004.
126. A. Bayen, R. Raffard and C. Tomlin, "Eulerian Network model of air traffic flow in congested areas," *Proceedings of the 2004 American Control Conference*, pp. 5520-5526, June 2004.
127. A. Bayen, R. Raffard and C. Tomlin, "Adjoint-based constrained control of Eulerian transportation networks: application to Air Traffic Control," *Proceedings of the 2004 American Control Conference*, pp. 5539-5545, June 2004.
128. A. Bayen, R. Raffard and C. Tomlin, "Network congestion alleviation using adjoint hybrid control: application to highways," *Hybrid Systems: Computation and Control* (R. Alur, G. Pappas, Eds.), Lecture Notes in Computer Science 2993, pp. 95-110, Springer-Verlag, March 2004.
129. A. Bayen, C. Tomlin, Y. Ye and J. Zhang, "MILP formulation and polynomial time algorithm for an aircraft scheduling problem," *Proceedings of the 42nd IEEE Conference on Decision and Control*, pp. 5003-5010, December 2003.
130. A. Bayen, S. Santhanam, I. Mitchell and C. Tomlin, "A differential game formulation of alert levels in ETMS data for high altitude traffic," *Proceedings of the AIAA Conference on Guidance, Navigation and Control*, AIAA Paper 2003-5341, August 2003.
131. A. Bayen and C. Tomlin, "Real-time discrete control law synthesis for hybrid systems using MILP: application to congested airspace," *Proceedings of the 2003 American Control Conference*, pp. 4620-4626, June 2003.
132. M. Oishi, I. Mitchell, A. Bayen, C. Tomlin and A. Dagani, "Hybrid verification of an interface for an automatic landing," *Proceedings of the 41st IEEE Conference on Decision and Control*, pp. 1607-1613, December 2002.
133. A. Bayen, P. Grieder and C. Tomlin, "A control theoretic predictive model for sector-based air traffic flow," *Proceedings of the AIAA Conference on Guidance, Navigation and Control*, AIAA Paper 2002-5011, August 2002.
134. A. Bayen, P. Grieder, H. Sipma, G. Meyer and C. Tomlin, "Delay predictive models of the National Airspace System using hybrid control theory," *Proceedings of the 2002 American Control Conference*, pp. 767-772, May 2002.
135. A. Bayen, E. Cruck and C. Tomlin, "Guaranteed overapproximations of unsafe sets for continuous and hybrid systems: solving the Hamilton-Jacobi equation using viability techniques," *Hybrid Systems: Computation and Control* (C. Tomlin and M. Greenstreet, Eds.), Lecture Notes in Computer Science 2289, pp. 90-104, Springer-Verlag, March 2002.
136. A. Bayen and C. Tomlin, "A construction procedure using characteristics for viscosity solutions of the Hamilton-Jacobi equation," *Proceedings of the 40th IEEE Conference on Decision and Control*, pp. 1657-1662, December 2001.

137. I. Mitchell, A. Bayen and C. Tomlin, "Validating a Hamilton-Jacobi approximation to hybrid system reachable sets," *Hybrid Systems: Computation and Control* (M. D. Di Benedetto and A. Sangiovanni-Vincentelli, Eds.), Lecture Notes in Computer Science 2034, pp. 418-432, Springer-Verlag, March 2001.

In review

1. F. Belletti, E. Sparks, A. Bayen, K. Keutzer, J. Gonzalez, "Random projection design for scalable implicit smoothing of randomly observed stochastic processes", AISTATS 2017
2. C. Wu, A. Mehta, and A. Bayen, "Shockwave mitigation control for multi-lane system-level traffic reduction," *International Conference on Robotics and Automation*, ICRA paper 2839, 2016
3. Q. Gan, G. Gomes and A. Bayen, "A methodology for evaluating the performance of model-based traffic prediction systems," *Transportation Research Board*, 2017
4. Q. Gan, G. Gomes and A. Bayen, "ARMAX flow predictor with data smoothing," *Transportation Research Board*, 2017
5. F. Belletti and A. Bayen, "Privacy-preserving taxi fleet management," ISTTT 2016

Non Proceedings Conferences

1. C. Robelin, D. Sun, G. Wu and A. Bayen, "En-route air traffic modeling and strategic flow management using mixed integer linear programming", *INFORMS Annual Meeting 2005*, New Orleans / San Francisco, November 13-16, 2005.
2. D. Sun and A. Bayen, "Modeling and strategic flow management using dual decomposition method," *INFORMS Annual Meeting*, Seattle, November 2007.

Position book

1. A. Bayen, A. Cairo, C. Cosgrove, L. Fogel, A. Brody Guy, L. Melendy, K. Rhodes, R. Sanders, S. Yang, *ITS Inventing the Future of Mobility*, University of California, Berkeley, 2015.

Position Articles

1. A. Allstrom, J. Archerb, A. Bayen, S. Blandin, J. Butler, D. Gundlegard, H. Koutsopoulos, J. Lundgren, M. Rahmani and O.-P. Tossavainen "Mobile Millennium Stockholm," *2nd International Conference on Models and Technologies for ITS*, Leuven, Belgium, June 22-24, 2011
2. G. Bastin, A. Bayen, C. D'Apice, X. Litrico and B. Piccoli, "Open problems and research perspectives for irrigation channels," *Networks and Heterogeneous Media*, 4(2), pp. i-v. doi:10.3934/nhm.2009.4.2i
3. M.-A. Piette, M. Sohn, A. Gadgil, A. Bayen, "Improved power grid stability and efficiency with a building-energy cyber-physical system," *National Workshop on Research Directions for Future Cyber-Physical Systems*, Baltimore, MD, June 3-4, 2008
4. D. Work and A. Bayen, "Impacts of the mobile internet on transportation cyberphysical systems: traffic monitoring using smartphones," *National Workshop for Research on High-Confidence Transportation Cyber-Physical Systems: Automotive, Aviation and Rail*, Washington, DC, November 18-20, 2008
5. D. Work, A. Bayen, and Q. Jacobson, Automotive cyber physical systems in the context of human mobility, *National Workshop on High-Confidence Automotive Cyber-Physical Systems*, Troy, MI, April 3-4, 2008
6. S. Amin et al. "Mobile Century - using GPS mobile phones as traffic sensors: A field experiment," *15th World Congress on Intelligent Transportation Systems*, New York, NY, Nov. 2008

Other publications

Book chapters

1. W. Krichene, J. Reilly, S. Amin, and A. Bayen, "Stackelberg Routing on Parallel Transportation Networks," *Dynamic Game Theory*, Springer Verlag, in review 2016

2. C. Wu, J. Thai, S. Yadlowski, A. Pozdnukhov and A. Bayen, "Cellpath: fusion of cellular and traffic sensor data for estimation in transportation cyber-physical systems via convex optimization," *Elsevier Book on Cyber Physical Systems*, to appear 2016
3. A. Bayen and C. Tomlin, "A case study: Air Traffic Management systems", *Encyclopedia of Life Support Systems*, Al Gogaisi (Ed.), UNESCO-EOLSS Publishers Co. Ltd. Ref: 6:43:28:8, 2005.
4. C. Tomlin, I. Mitchell and A. Bayen, "Verification of hybrid systems", *Encyclopedia of Life Support Systems*, Al Gogaisi (Ed.), UNESCO-EOLSS Publishers Co. Ltd. Ref: 6:43:28:6, 2005.
5. C. Tomlin, S. Boyd, I. Mitchell, A. Bayen, M. Johansson, and L. Xiao, "Computational Tools for the Verification of Hybrid Systems" *Software-Enabled Control*, Samad and Balas (Eds.), John Wiley, March 2003.

Technical reports

1. A. Bayen, M. Sharafsaleh, A. Patire, et al., "Hybrid traffic data collection roadmap: pilot procurement of third-party traffic data," Univ. California, Berkeley, PATH Res. Rep. UCB-ITS-PRR-2013-1, Oct. 2013.
2. A. Bayen, M. Sharafsaleh, A. Patire, et al., "Hybrid traffic data collection roadmap: objectives and methods," Univ. California, Berkeley, PATH Res. Rep. UCB-ITS-PRR-2013-2, Oct. 2013
3. M. Zaharia, T. Das, H. Li, Haoyuan, T. Hunter, S. Shenker, and I. Stoica, "Discretized Streams: A Fault-Tolerant Model for Scalable Stream Processing," UC Berkeley Technical Report, UCB/EECS-2012-259, 2013
4. K. Clarke, L. Anselin, A. Bayen, G. Black, B. Battenfield, K. Carley, J. Jensen, R. Langley, E. Mikhail, S. Shekhar, M. Solem, P. Stephan, M. Yuan, M. Zyda, A. Linn, G. Greenfield, E. Edkin, "Future U.S. Workforce for Geospatial Intelligence," *The National Research Council of the National Academies*, The National Academies Press, 2013
5. S. Dashti, J. Reilly, J. Bray, A. Bayen, S. Glaser and M. Ervasti, "iShake: Using Personal Devices to Deliver Rapid Semi-Qualitative Earthquake Shaking Information," GeoEngineering Report, Depart. of Civil and Environ. Engineering, Univ. of California, Berkeley, Feb 2011, G10AP00006
6. A. Hofleitner, R. Herring, A. Bayen, "A hydrodynamic theory based statistical model of arterial traffic," *Technical Report UC Berkeley*, UCB-ITS-CWP-2011-2, January 2011
7. A. Bayen, J. Butler, A. Patire et al., "Mobile Millennium," *CCIT Research Report, UC Berkeley, Institute of Transportation Studies (ITS)*, UCB-ITS-CWP-2011-6, 2011.
8. S. Dashti, J. Reilly, J. D. Bray, A. Bayen, S. Glaser, and M. Ervasti, "iShake: Using Personal Devices to Deliver Rapid Semi-Qualitative Earthquake Shaking Information," *USGS Award G10AP00006 Technical Report*, UC Berkeley, February 2011
9. A. Bayen, J.-C. Herrera, D. Work, R. Herring, X. Ban, Q. Jacobson and J. Butler, "Mobile Century: Using GPS Mobile Phones as Traffic Sensors: A Field Experiment," *CCIT Research Report, UC Berkeley, Institute of Transportation Studies (ITS)*, UCB-ITS-CWP-2010-4, ISSN 1557-2269, 2010
10. A. Patire, A. Bayen, D. Work, J.-C. Herrera, R. Herring, X. Ban, Q. Jacobson, O.-P. Tossavainen, S. Blandin, C. Claudel, A. Mortazavi, S. ANDREWS, B. HOH, M. GRUTESER, M. ANNAVARAM, T. IWUCHUKWU, K. TRACTON, "Mobile Century: a traffic sensing field experiment using GPS mobile phones", *CCIT Research Report, UC Berkeley, Institute of Transportation Studies (ITS)*, UCB-ITS-CWP-2010-4, 2010.
11. J.-C. Herrera, S. Amin, A. Bayen, S. Madanat, M. Zhang, Y. Nie, Z. Qian, Y. Lou, Y. Yin and M. Li, "Dynamic estimation of OD matrices for freeways and arterials," *Technical Report, Institute for Transportation Studies, UC Berkeley*, 2007
12. Jean-Pierre Aubin, Alexandre Bayen, Patrick Saint-Pierre, "Dirichlet problems for some Hamilton-Jacobi equations with inequality constraints," *Preprint di Matematica - n. 4*, Scuola Normale Superiore, Pisa, Italy, May 2006

Doctoral Thesis

1. A. Bayen, *Computational control of networks of dynamical systems: application to the National Airspace System*, Ph.D. dissertation, Department of Aeronautics and Astronautics, Stanford University, Dec. 2003.

PRESS RELEASES, INTERVIEWS, MEDIA ARTICLES

Press conferences

- *SmartCities Challenge*, City Hall, San Francisco, CA May 18, 2016
Held jointly with SF MTA
- *Mobile Millennium*, UC Berkeley, CA November 10, 2008
Held jointly with Nokia, Navteq and the California DOT
- *Safe Trip 21*, Bay Bridge, Oakland, CA June 26, 2008
Held jointly with the US DOT and the California DOT
- *Mobile Century*, Union Landing, CA February 8, 2008
Held jointly with Nokia and the California DOT

Press releases

- *MIT*, "Cellphone data helps pinpoint source of traffic tie-ups", Dec. 20, 2012
- *UC Berkeley*, "Cellphone, GPS data suggest new strategy for alleviating traffic tie-ups", Dec. 20, 2012
- *UC Berkeley*, "Floating robots use GPS-enabled smartphones to track water flow," May 9, 2012
- *UC Berkeley*, "Campus dedicates new state-of-the-arts CITRIS research headquarters," Mar. 2, 2009
- *UC Berkeley*, "Dedication of new CITRIS headquarters marks new stage of innovation to help fuel economic growth," Feb. 27, 2009
- *Nokia*, "Nokia Research Center puts Mobile Millennium in gear to help reduce traffic congestion," Nov. 10, 2008
- *UC Berkeley*, "UC Berkeley and Nokia turn mobile phones into traffic probes with launch of pilot traffic-monitoring software," Nov. 6, 2008
- *ITS America*, "ITS America announces finalists for the 2008 Best of ITS Awards," Oct. 30, 2008
- *U.S. Department of Transportation*, "U.S. DOT partners with Caltrans to move California drivers one step closer to instant travel information and safety technologies," Jun. 25, 2008
- *Nokia*, "Nokia and UC Berkeley capture real-time traffic information using GPS enabled mobile devices," Feb. 8, 2008
- *UC Berkeley*, "Joint Nokia research project captures traffic data using GPS-enabled cell phones," Feb. 8, 2008

TV interviews (selected)

- *KTVU / Fox News*, Interview part of the 5 o'clock news, by John Fowler, May 9, 2014
- *KPIC / ABC News*, "Nissan developing driverless cars in Sunnyvale," Nov. 29, 2013
- *ABC News*, "Commuting Costs on the Rise in America," by Diane Sawyer and Paula Faris, June 5, 2013
- *The Discovery Channel*, Daily Planet Segment – "Traffic Jams", by Barb Ustina, April 8, 2013
- *NBC*, Live interview as part of the NBC Bay Area News, by Janelle Wang, May 25, 2012
- *KGO-TV*, "Floating robots provide insight into Delta waters," May 9, 2012 by Laura Anthony
- *KCRA*, "GPS Devices Tossed In Sacramento River For Study," May 10, 2012
- *FOXBusiness*, "Move Over Watson: New IBM System Will Predict Traffic," April 13, 2011, by Jennifer Booton
- *ABC News*, "IBM Training Computers to Predict Traffic," April 13, 2011, by Jordan Roberts
- *MSNBC*, "Smartphones to ease traffic snarls," April 13, 2011, by John Roach
- *OETA News*, "New Levee Bewatching Prevention Techniques," Nov. 11, 2009
- *CBS's Smart Planet*, "Alex Bayen, Professor, Systems Engineering, UC Berkeley," May 29, 2009, by Jason Pepper
- *NBC News*, "Tech Future in Good Hands at Cal," May 6, 2009
- *Cnet*, "Nokia shows off real-time traffic application," Nov. 18, 2008
- *BBC News*, "Tech that trumps traffic tangles," Nov. 18, 2008, by Jason Palmer
- *Cnet*, "Using your cell phone's GPS to map traffic," Nov. 11, 2008, by Kara Tsuboi
- *KTVU*, "UC Berkeley To Offer Free Cell Phone GPS Download," Nov. 10, 2008.
- *CBS News*, "Cal Program Uses Cell Phones to Unjam Traffic," Nov. 10, 2008
- *ABC News*, "UC Berkeley teams up with Nokia for traffic," Nov. 10, 2008
- *NBC News*, "Gridlock Gadget: New Cell Phone Software to Help Drivers Avoid Traffic," Nov. 10, 2008
- *ABC News*, "Real-time traffic information to your cell phone," Jun. 25, 2008
- *NBC News*, "Bay Area traffic study kicks off," Jun. 25, 2008
- *Cnet*, "Mobile Sensing-mini subs explore Sacramento," Jun. 20, 2008
- *Cnet*, "Students get stuck in traffic for Nokia," Feb. 12, 2008
- *Cnet*, "Nokia trials N95 as traffic monitor," Feb. 11, 2008
- *CBS News*, "Cal, Nokia test GPS technology for traffic info," Feb. 8, 2008
- *ABC News*, "Cell phones used to test Easy Bay traffic," Feb. 8, 2008
- *Cnet*, "Nokia turns people into traffic sensors," Feb. 8, 2008

- *NBC News*, “Researchers test GPS-cell phone navigation in South Bay,” Feb. 8, 2008
- *Fox News*, “Nokia and UC Berkeley capture real-time traffic information using GPS enabled mobile devices,” Feb. 8, 2008

Radio interviews (selected)

- *KRON4*, “In-depth: Are the I-80 SMART corridors easing traffic congestion?,” Nov. 3, 2016, interview by Philippe Djegal
- *BFM TV Business*, “BFM L’Atelier Numérique, La voiture de demain,” interview Dec. 5, 2015 by Francois Sorel
- *KQED/NPR*, “The Commonwealth Club, Climate One,” Nov. 2, 2015, interview by Greg Dalton
- *KQED/NPR*, “Forum: Study: Bay Area Traffic Second-Worst in Nation” June 5, 2015, by Michael Krazny (live)
- *Sveriges Radio*, “Big data kan förutse bilköer,” by Peter Johansson, June 4, 2014
- *France Inter*, “Des octets dans ma ville,” March 8, 2105, by Helene Chevallier
- *KALW*, “Big Picture Science - Shutting Down Science,” Oct. 30, 2013, by Gary Niederhoff
- *Radio Caraïbes*, “Le Grand Angle (Le Journal de 13 Heures),” Sep. 10, 2013, by Beatrice Vandevoorde (interview given by PhD student Tim Hunter)
- *KQED/NPR*, “The California Report/Magazine,” Sep. 2, 2013, by Dan Brekke
- *KQED/NPR*, “Lessons from the Bay Bridge”, Aug. 30, 2013, by Dan Brekke
- *BBC World Service*, “Route 66 of the future: signal failure,” May 18, 2013, by Garrett Mitchell
- *KCBS/CBS*, Live interview, Dec. 20, 2012, by Anchor Melissa Culross
- *KQED/NPR*, “The California Report,” Dec. 12, by Peter Jon Shuler
- *KQED/NPR*, “Do High-Tech Traffic Tools Work? Caltrans Hopes They’ll Ease I-80 Traffic Mess,” Oct. 22, 2012 by Lauren Sommer
- *SCPR* and *KPCC*, “California water system monitored by UC Berkeley tweeting robots,” May. 17, 2012 by Scott Sterling
- *Nature-podcast*, “Phoning in Data,” April 23, 2009, by Roberta Kwok
- *KQED/NPR*, “Dialing in on Traffic,” Dec. 15, 2008, by David Gorn
- *NPR*, “Who’s Calling? It’s Your Traffic Report,” Jan. 26, 2009, by David Gorn
- *KQED/NPR*, “Reporter’s Notes: Dialing in on Traffic,” Dec. 12, 2008, by David Gorn
- *National Public Radio*, “Cell Phones: a new commuter tool?,” Feb. 11, 2008
- *KCBS*, “Researchers road test GPS technology for traffic info,” Feb. 8, 2008

Newspaper or magazine interviews or articles (selected)

- *The Daily Californian* “UC Berkeley experts, San Francisco petition for ‘smart city’ funding from Department of Transportation,” June 13, 2016, by Jessie Qian
- *The Guardian* “Still no flying cars? The future of transit promises something even better,” Nov. 4, 2015, by Alison Moodie
- *Le Monde*, “Dans la Silicon Valley, des ‘Frenchies’ heureux”, Feb. 12, 2014, by Corine Lesnes
- *MIT Technology Review*, “How Wireless Carriers Are Monetizing Your Movements,” April 12, 2013, by Jessica Leber
- *L’Etudiant*, “La reconnaissance française in the valley”, April 8, 2013
- *San Jose Mercury News*, “Key source of Bay Area traffic headaches revealed by top researchers”, Jan. 8, 2013
- *Contra Costa Times*, “Key source of Bay Area traffic headaches revealed by top researchers”, Jan. 8, 2013
- *LA Weekly*, “L.A. Traffic Relief Possible If We Targeted Specific Neighborhoods, Says GPS Data”, Dec. 24, 2012
- *Oregon Herald*, “gridlock traced to just a few key commuters”, Dec. 21, 2012
- *Wiener Zeitung*, “Verkehrsstaus speisen sich aus überraschend wenigen Quellen”, Dec. 21, 2012
- *New Scientist*, “Beating the traffic before it even exists”, Nov. 11, 2012
- *Wired*, “Study: Connecting With Others Soothes the Savage Commuter,” Dec. 14, by Doug Newcomb
- *The New York Times*, “Crowdsourcing Your Commute”, Dec. 10, 2012, by Christopher Schuetze
- *The Economist*, “Open-air computers Cities are turning into vast data factories,” Oct. 27, 2012, by Patrick Lane
- *BurmaNews*, “Floating robots use GPS-enabled smartphones to track water flow,” May. 17, 2012
- *Computer World*, “UC Berkeley tests floating robot sensors to track environmental concerns,” May. 9, 2012 by Kerry Davis
- *The Daily Californian*, “ UC Berkeley robot fleet takes over California waterways to gather data,” May. 20, 2012 by Kelly Fang
- *PC World*, “ UC Berkeley Tests Floating Robot Sensors to Track Water Flow, Environmental Concerns,” May. 9, 2012 by Kerry Davis
- *PC World Mikro*, “ Univerzitet Kalifornije testira plutajuće robotizovane senzore,” May. 10, 2012 by Lorens Livermor
- *San Jose Mercury News*, “ Fleet of foot-long robots analyze Sacramento River,” May. 10, 2012 by The Associated Press
- *San Francisco Chronicle*, “ Robots measure flow of Sacramento River” May. 9, 2012 by David Perlman
- *Le Monde*, “Facebook, GPS, smartphone : comment concilier collecte de données et vie privée,” by Laure Belot, May 11, 2012
- *Le Monde*, “Mon smartphone est trop bavard,” by Laure Belot, May 11, 2012
- *The Economic Times*, “IBM commuter app predicts traffic jams before they happen,” May 3, 2011
- *Wired*, “IBM App Predicts How Your Commute Will Go,” April 13, 2011, by Chuck Squatriglia

- *TIME*, “IBM Wants to Improve Your Commute With Traffic Prediction,” April 13, 2011, by Jared Newman
- *New Scientist*, “Beating the traffic before it even exists,” May 2, 2011, by Phil McKenna
- *The Wall Street Journal*, “The Inconvenient Truth About Traffic Math: Progress Is Slow,” Aug. 28, 2010, by Carl Bialik
- *California Alumni Magazine*, “The Connected Commute,” May/June 2009, by David Downs
- *The New York Times*, “Smarter GPS to Let Cellphones Point the Way,” May 3, 2009, by Roy Furchgott
- *Nature*, “Phoning in Data,” April 23, 2009, by Roberta Kwok
- *Die Welt*, “Das Handy wird zum Navi der Zukunft,” March 18, 2009
- *The Sacramento Bee*, “Test program guides travelers by cell phone,” Nov. 25, 2008, by Tony Bizjak
- *New Scientist*, “Cellphone clusters give traffic jams away,” Nov. 22, 2008
- *The New York Times*, “Volunteers Sought for Real-Time Traffic Project,” Nov. 18, 2008 by Roy Furchgott
- *The Earth Times*, “Groundbreaking Debut of Traffic Probe Data at ITS World Congress,” Nov. 17, 2008
- *Contra Costa Times*, “Traffic study goes high tech,” Nov. 13, 2008 by Erik Nelson
- *San Jose Mercury News*, “UC Berkeley software turns cell phones into traffic trackers,” Nov. 13, 2008, by Dennis Cuff
- *The Daily Californian*, “Researchers’ New GPS Software Could Get Drivers Out of a Jam,” Nov. 10, 2008
- *San Francisco Chronicle*, “Cell phones part of traffic monitoring network,” Nov. 10, 2008
- *Forbes*, “Nokia Research Center Pults Mobile Millennium in Gear to Help Reduce Traffic Congestion,” Nov. 10, 2008
- *San Francisco Chronicle*, “GPS Cell phones hooked up to monitor traffic,” Nov. 9, 2008
- *San Francisco Chronicle*, “Plan to avoid traffic jams using cell phones,” Jun. 26, 2008
- *The Oakland Tribune*, “Feds to help world’s largest traffic tech test,” Jun. 25, 2008
- *The Oakland Tribune*, “Experiment uses phones to track I-880 traffic,” Feb. 9, 2008
- *San Jose Mercury News*, “Researchers try tracking traffic using cell phone GPS,” Feb. 9, 2008
- *Los Angeles Times*, “Using cell phones to beat traffic?,” Feb. 9, 2008
- *Tri Valley Herald*, “New GPS phone system tested on Interstate 880,” Feb. 9, 2008
- *San Mateo County Times*, “GPS-based system would track traffic with phones,” Feb. 9, 2008
- *San Francisco Chronicle*, “Cell phone test to monitor I-880 traffic flow,” Feb. 5, 2008

Other media outlets (selected)

- *The Atlantic Citylab*, “Imagining a Traffic-Free Future By Sending Driverless Cars Underground,” by Linda Poon, Dec. 9, 2016
- *SmartMeters*, “Driverless Cars the New Must-Have Appliance,” By Kathleen Tracy, Jan. 22, 2014
- *Our Ocean*, “Floating robots “go with the flow” to monitor water quality,” by Christina Johnson, Sep. 12, 2013
- *Our Ocean*, “\$1.2 million awarded to 10 new Delta Science Fellows,” by Christina Johnson, Sep. 12, 2013
- *Phys.org*, “New algorithm finds best routes for one-way car sharing,” by Jennifer Chu, June 24, 2013
- *MIT News*, “New algorithm finds best routes for one-way car sharing,” by Jennifer Chu, June 24, 2013
- *L’Usine Digitale*, “Les objets connectés sont l’industrie de demain,” by Wassinia Zirar, May 20, 2013
- *Mathworks Newsletter*, “Motivating First-Year UC Berkeley Students to Learn Programming with a Virtual Robot Tournament,” by Timmy Siau, May 18, 2013
- *R&D Magazine*, “Project aims to manage traffic in California using data,” by Gordy Slack, March 18, 2013
- *CITRIS newsletter*, “Connected Corridors,” by Gordy Slack, March 4, 2013
- *ArsTechnica*, “Cell phone tracking system reveals how traffic jams start,” by Jon Brodtkin, Feb. 17, 2013
- *CarInsuranceQuotes.com*, “UC Berkeley professor: Traffic tie-ups are tied to your neighborhood,” by Allie Johnson, Feb. 4, 2013
- *Business Insider*, “It Only Takes A Few People To Make A Traffic Jam”, Dec. 22, 2012
- *Yahoo*, “Gridlock Traced to Just a Few Key Commuters”, Dec. 21, 2012
- *Bight Surf*, “Cellphone, GPS data suggest new strategy for alleviating traffic tie-ups”, Dec. 21, 2012
- *News Track India*, “Cellphone data may help pinpoint source of traffic congestion”, Dec. 21, 2012
- *Rocket News*, “Gridlock Traced to Just a Few Key Commuters”, Dec. 21, 2012
- *Real Clear Science*, “An Easy Way to Reduce Traffic Congestion?”, Dec. 21, 2012
- *MNN*, “Gridlock traced to just a few key commuters”, Dec. 21, 2012
- *Science Business*, “Cell Phone, GPS Data Identify Urban Traffic Jam Sources”, Dec.21, 2012
- *Kepea*, “Gridlock traced to just a few key commuters”, Dec. 21, 2012
- *World News*, “Gridlock Traced to Just a Few Key Commuters”, Dec. 21, 2012
- *Phys ORG*, “Cellphone, GPS data suggest new strategy for alleviating traffic tie-ups”, Dec. 20, 2012
- *Science Daily*, “Traffic Congestion Can Be Alleviated Throughout a Metropolitan Area by Altering Trips in Specific Neighborhoods, Model Shows”, Dec. 20, 2012
- *Technews Daily*, “Gridlock Traced to Just a Few Key Commuters”, Dec. 20, 2012
- *MSNBC* [website], “Gridlock Traced to Just a Few Key Commuters”, Dec. 20, 2012
- *LiveScience*, “Gridlock Traced to Just a Few Key Commuters”, Dec. 20, 2012

- *TMCNet*, “Study prompts rethink of traffic tie-ups”, Dec. 20, 2012
- *Cellular-News*, “Cellphone, GPS Data Suggest New Strategy for Alleviating Traffic Tie-ups”, Dec. 20, 2012
- *EurekAlert*, “Cellphone, GPS data suggest new strategy for alleviating traffic tie-ups”, Dec. 20, 2012
- *UPI*, “Study prompts rethink of traffic tie-ups”, Dec. 20, 2012
- *The Atlantic Cities*, “More Cars on the Road Make You Late, But Some Cars Make You Much Later Than Others”, Dec. 20, 2012
- *NBC News* [website], “Stuck in traffic? Get the right 1 percent of drivers to stay home, says study”, Dec. 20, 2012
- *Red Orbit*, “Mobile Phone Data Used To Pinpoint Source Of Traffic Congestion”, Dec. 20, 2012
- *LiveScience*, “Gridlock Traced to Just a Few Key Commuters”, Dec. 20, 2012
- *Science Blog*, “Cellphone, GPS data suggest new strategy for alleviating traffic tie-ups”, Dec. 20, 2012
- *Science CodEX*, “Cellphone, GPS data suggest new strategy for alleviating traffic tie-ups”, Dec. 20, 2012
- *The Atlantic Cities*, “More Cars on the Road Make You Late, But Some Cars Make You Much Later Than Others”, Dec. 20, 2012
- *R&D News*, “Cell phone data helps pinpoint source of traffic tie-ups”, Dec. 20, 2012
- *e! Science News*, “Cellphone, GPS data suggest new strategy for alleviating traffic tie-ups”, Dec. 20, 2012
- *Science@ORF.at*, “Wer verursacht Verkehrsstaus?”, Dec. 20, 2012
- *Nature.com*, “Understanding Road Usage Patterns in Urban Areas”, Dec. 20, 2012
- *Krone.at*, “Verkehrsstaus speisen sich aus wenigen Quellen”, Dec. 20, 2012
- *Climatewire*, “Traffic in the U.S. eases as fewer Americans decide to drive”, July 5, 2012
- *TheTransWire.com*, “Study looks at value of crowd-sourced traffic and transit information,” Dec. 11, 2012, by Susan
- *New Cities Foundation News*, “New Cities Foundation Unveils Results of Landmark Study on Commuting and Social Networks,” Dec. 10, 2012, by Lucie-Anne Radimsky
- *The Atlantic Cities*, “Solo Drivers Say They Benefit From App Communities,” Dec. 10, 2012 by Emily Badger
- *MIT Media News*, “Speeding Algorithms by Shrinking Data,” Nov. 13, 2012, by Kimberly Allen
- *Science News* “Smart-Phone Robots Tweet Flow Dynamics Data in Real Time,” July 25, 2012, by Laura Walker
- *Adafruit*, “Floating Robots Use GPS-Enabled Smartphones to Transmit Data and Location,” May. 10, 2012 by Tyler Cooper
- *Adafruit*, “UC Berkeley’s Floating Sensor Network,” May. 17, 2012 by Tyler Cooper
- *Berkeley News Center*, “Floating robots use GPS-enabled smartphones to track water flow,” May. 9, 2012 by Sarah Yang
- *CIO*, “UC Berkeley tests floating robot sensors to track water flow, environmental concerns,” May. 10, 2012 by Kerry Davies
- *Computer World*, “UC Berkeley tests floating robot sensors to track environmental concerns,” May. 9, 2012 by Kerry Davis
- *Corriere della Serra*, “California, 100 robotmisurano inquinamento fiumi,” May. 16, 2012
- *Discovery News*, “GPS Robot Swarm Swims California Rivers,” May. 13, 2012 by Jesse Emspak
- *Futurity*, “Smartphones in tow, robots take a swim,” May. 14, 2012 by Sarah Yang
- *Hack a day*, “Floating sensor networks,” May. 15, 2012 by Caleb Kraft
- *IDG*, “UC Berkeley tests floating robot sensors to track water flow, environmental concerns,” May. 10, 2012 by Kerry Davis
- *inovacao tecnologica*, “Robos flutuantes vao monitorar rios usando celular,” May. 16, 2012 by Mais Temas
- *MeteoWeb*, “Floating Sensor Network: cento robot per misurare l’inquinamento dei fiumi californiani,” May. 15, 2012 by Renato Sansone
- *NERSC*, “Floating Robots Track Water Flow, Stream Data via Smartphones,” May. 9, 2012 by Jon Bashor
- *Our amazing Planet*, “GPS Robot Swarm Swims California Rivers,” May. 14, 2012 by Discovery News
- *Phy.org*, “Floating robots use GPS-enabled smartphones to track water flow,” May. 10, 2012 by Sarah Yang
- *Product Design and Development*, “Photos of the Day: Floating Robots Track Water Flow With Smartphones,” May. 14, 2012
- *R&D Magazine*, “Floating robots use GPS-enabled smartphones to track water flow,” May. 10, 2012 by University of California, Berkeley
- *redOrbit*, “Smartphones, Floating Robots Used To Track Water Flow,” May. 14, 2012
- *rinnovabili*, “Inquinamento delle acque: parte il ‘Floating Sensor Network’,” May. 15, 2012 by Rinnovabili.it
- *Robots.net*, “Berkeley Sends 100 Robots Down River,” May. 16, 2012 by Steve
- *San Jose Mercury News*, “Fleet of foot-long robots analyze Sacramento River,” May. 10, 2012 by The Associated Press
- *Science Blog*, “Floating robots use gps-enabled smartphones to monitor water,” May. 14, 2012
- *Sierra Club*, “Follow Water Quality Robots on Twitter,” May. 22, 2012 by Benita Hussain
- *Smart Planet*, “Floating, smartphone-equipped robots track water flow,” May. 10, 2012 by Charlie Osborne
- *SpaceDaily*, “Floating robots use GPS-enabled smartphones to track water flow,” May. 16, 2012 by Sarah Yang
- *Tendencias21*, “Robots flotantes con smartphones y GPS incorporados analizan los rivos” May. 16, 2012 by Carlos Gomez Abajo
- *thanhnien online*, “Binh doan ro bt boi dc song ti California,” May. 14, 2012 by Ho Nhien

- *The Verge*, “Smartphone-equipped floating robots transmit water data in real-time,” May. 10, 2012 by Andrew Webster
- *TPM*, “UC Berkeley Launches Swarm of 100 Floating Robots,” May. 18, 2012 by Paul Werdel
- *Trehugger*, “Tweeting Robots Monitor Water Quality in California Rivers,” May. 14, 2012 by Alex Davies
- *twittermania*, “Twitterende robot meet waterkwaliteit,” May. 19, 2012 by Herman Couwenbergh
- *Ubergizmo*, “Smartphones used on floating robots to track water flow,” May. 10, 2012 by Gene Ryan Briones
- *vivanews*, “Robot Ini Jago Berenang dan Twitter-an,” May. 15, 2012 by Karlina Octaviany, Amal Nur Ngazis
- *Central Valley Business Times*, “Avoiding traffic jams before they happen,” April 13, 2011
- *Thing*, “IBM working on traffic prediction phone app,” April 13, 2011
- *Tech Eye*, “IBM wants to Kick Out The Jams with predictive software,” April 13, 2011
- *Smart Planet*, “IBM, Berkeley partner on real-time traffic modeling for Bay Area,” April 13, 2011, by Andrew Nusca
- *TMCnet*, “IBM Partners with Caltrans and UC Berkeley to Avoid Traffic Jams,” April 14, 2011, by Raju Shanbhag
- *XINHUANNEWS*, “IBM plans transportation system to predict traffic jam,” April 14, 2011, by Mu Xuequan
- *Government Technology*, “California Aims to Improve Predictions for Traffic Jams,” April 14, 2011, by News Staff
- *AFP*, “IBM driver tool predicts traffic jams,” April 12, 2011, by Glenn Chapman
- *eWeek Europe*, “IBM Commuter App Could Unravel Travel Tangles,” April 14, 2011, by Eric Doyle
- *Treehugger*, “IBM Smart Phone App Predicts Traffic So You Avoid Jams,” April 14, 2011, by Jaymi Heimbuch
- *Hot Hardware*, “IBM Works To Make Traffic Smarter And Smoother,” April 14, 2011, by Ray Willington
- *San Francisco Business Times*, “IBM fighting Bay Area traffic jams,” April 13, 2011, by San Francisco Business Times
- *Gizmodo*, “IBM’s Smarter Traveler Predicts Your Commute Automatically,” April 14, 2011, by Kyle Wagner
- *Silicon Valley Business Journal*, “IBM, Caltrans help drivers skirt jams,” April 13, 2011, by Silicon Valley/San Jose Business Journal
- *Government Computer News*, “Analytics tool predicts the traffic for Bay Area drivers,” April 13, 2011, by Kathleen Hickey
- *Reuters*, “CITRIS: An Incubator of Green Tech Innovation,” May 6, 2009
- *Venture Beat*, “UC Berkeley’s CITRIS lab: a haven for startups trying to solve big problems,” May 6, 2009, by Dean Takahashi
- *Nokia Open Innovation Newsletter*, “Open Threads,” April 2009
- *IEEE*, “Intelligent Transportation Systems, Cell Phone Enhancements Improve Mass Transit,” Feb. 23, 2009
- *IEEE Spectrum*, “Cell Phones for Science,” February 2009, by Prachi Patel-Predd
- *The Industry Standard*, “Researchers use your cellphone to provide real-time traffic information,” Jan. 27, 2009, by Sindya Bhanoo
- *The Journal*, “Comment: Information must be protected,” Dec. 18, 2008, by Maitland Hyslop
- *Excelsior*, “Ring, trafico al habla,” Dec. 10, 2008, by Carlos Fernandez de Lara
- *CITRIS Report*, “Taming Traffic with Your Phone: The Mobile Millennium Project”, Dec. 08, 2008, by Gordy Slack
- *NewsBITS*, “Berkeley Researchers’ High Profile at the 15th annual ITS World Congress in NYC,” Winter 2008, by Ann Brody-Guy
- *Cal Neighbors*, “Bay Area drivers can use cell phones to avoid traffic snarls,” Fall 2008
- *CEE @ Berkeley Connections*, “Mobile Millennium Poised to Expand Bay Area’s Reputation as High-tech leader,” Fall 2008,
- *ARS Technica*, “Nokia collaboration may keep you out of traffic jams,” Nov. 23, 2008, by David Chartier
- *Venture Beat*, “Nokia researchers show off the mobile experiences of the future,” Nov. 20, 2008, by Dean Takahashi
- *US News & World Report*, “Volunteer to Have Your Driving Habits Tracked, Help Reduce Traffic,” Nov. 19, 2008
- *Daily News Online*, “NAVTEQ dials into new traffic monitoring data,” Nov. 18, 2008
- *Wi-Fi Cell Phones*, “Mobile Millennium- GPS Traffic Mapping,” Nov. 18, 2008
- *This Week in Consumer Electronics -TWICE*, “Navteq/Nokia Offer Advanced Traffic Updates,” Nov. 17, 2008, by Amy Gilroy
- *GNT*, “Mobile Millennium: Nokia teste l’info trafic par mobile GPS,” Nov. 14, 2008, by C. Bruno
- *SDA Asia*, “Nokia Research Center puts Mobile Millennium to Curb Traffic Congestion,” Nov. 13, 2008
- *ZD Net*, “Nokia working to reduce traffic congestion,” Nov. 12, 2008, by Matthew Miller
- *Newsfactor.com*, “New Software Turns Cell Phones into Traffic Trackers,” Nov. 12, 2008
- *MSNBC*, “GPS’li telefonar trafik bilgisi olusturacak,” Nov. 12, 2008
- *Mobinaute*, “Nokia utilisera ses mobiles GPS pour eviter les embouteillages,” Nov. 12, 2008
- *The Independent*, “Flu outbreaks and traffic jams,” Nov. 12, 2008
- *Electricpig*, “Nokia launches next-gen traffic studies,” Nov. 12, 2008
- *American Public Media*, “Software empowers cell phones to fight traffic congestion,” Nov. 11, 2008
- *TMCnet*, “Nokia Intro Mobile Millennium to Help Reduce Roadway Traffic Congestion,” Nov. 11, 2008
- *MIT Technology Review*, “Tracking Traffic with Cell Phones: A new project collects traffic data from GPS-enabled cell phones,” Nov. 11, 2008
- *IT Pro*, “Nokia studies traffic with GPS-enabled mobiles,” Nov. 11, 2008
- *Computer Zeitung*, “Pilotprojekt erprobt GPS-basierte Verkehrshcarichten in Echtzeit,” Nov. 11, 2008
- *GPS Business News*, “Nokia, NAVTEQ in large scale trial for traffic information generated by GPS-phones,” Nov. 11, 2008

- *PressDemocrat.com*, “Cell phones can help traffic flow,” Nov. 10, 2008
- *impre.com*, “A olvidarse del caos vial,” Nov. 10, 2008
- *VOIP IP Technology*, “Mobile Millennium Project, GPS and Mobile Phones To Ease Your Commute,” Nov. 10, 2008
- *BlogoWogo*, “Free Traffic Info with Nokia’s Mobile Millennium,” Nov. 10, 2008
- *L’Atelier*, “Les mobiles GPS recréent le trafic routier de San Francisco,” Nov. 10, 2008
- *Cellular-News*, “Using Mobile Phones to Monitor Road Traffic Congestion,” Nov. 10, 2008
- *Computer World*, “Project turns GPS phones into traffic reporters,” Nov. 10, 2008
- *Inside-handy.de*, “Neue Software nutzt Handys mit GPS als Stau-Sensoren,” Nov. 10, 2008
- *Media Post*, “Mobile Program Sends Real-Time Traffic Info,” Nov. 10, 2008
- *New Mobile Tech*, “Mobile Millennium Gives You Traffic Reports, For Free,” Nov. 10, 2008
- *Pocket-lint*, “Nokia Announces Mobile Millennium Project,” Nov. 10, 2008
- *SFist*, “UC Berkeley releases cell phone program to help ease traffic,” Nov. 10, 2008
- *Slash Gear*, “Nokia Mobile Millennium GPS traffic monitoring project seeks volunteers,” Nov. 10, 2008
- *Symbian Freak*, “Large scale public pilot to gather and analyse traffic information using GPS-enabled mobile devices,” Nov. 10, 2008
- *Symbian-guru.com*, “Nokia launches public trial of Mobile Millennium,” Nov. 10, 2008
- *TechRadar.com*, “Nokia’s Mobile Millennium gives free traffic info,” Nov. 10, 2008
- *Telecom Paper*, “Open-source-concurrentie in VS voor TomTom HD Traffic,” Nov. 10, 2008
- *PC Magazine*, “Cell Phones Linked to Track Real-Time Traffic,” Nov. 10, 2008
- *Mobile Messaging 2.0*, “Nokia Launches Mobile Millennium for Traffic Updates,” Nov. 10, 2008
- *mocoNews.net*, “Nokia’s Big Traffic Plans,” Nov. 10, 2008
- *Gizmodo*, “Mobile Millennium Project is a Poor Man’s Traffic Relaying GPS,” Nov. 8, 2008
- *Dr. Dobb’s Portal*, “Turning Mobile Phones into Traffic Cops,” Nov. 7, 2008
- *Engadget*, “Mobile Millennium Project promises to track traffic with cellphones,” Nov. 7, 2008
- *PC World*, “Camera Phones and GPS Are for SMBs Too, Says Startup,” Nov. 7, 2008
- *RoadFlares.org*, “Mobile Millennium,” Nov. 7, 2008
- *Slashdot*, “Project Turns GPS Phones into Traffic Reporters,” Nov. 7, 2008
- *TransID*, “The Mobile Millennium project: GPS et informations trafic!,” Nov. 7, 2008
- *Zimbio*, “Mobile Millennium project promises to track traffic with cellphones,” Nov. 7, 2008
- *GPS World*, “NorCal GPS Cell Phone Traffic Probe Project Gets Underway,” Nov. 7, 2008
- *CITRIS News*, “UC Berkeley and Nokia turn mobile phones into traffic probes with launch of pilot traffic-monitoring software,” Nov. 6, 2008
- *PhysOrg.com*, “UC Berkeley, Nokia turn mobile phones into traffic probes,” Nov. 6, 2008
- *UC Berkeley Newsroom*, “UC Berkeley and Nokia turn mobile phones into traffic probes with launch of pilot traffic-monitoring software,” Nov. 6, 2008
- *CITRIS News*, “Intelligent Infrastructure: Public Service, Safety, and Security: Floating and Cellular Sensors,” Jun. 2008
- *MIT Technology Review*, “New GPS Software,” May 16, 2008
- *PR Web*, “Mobile Sensing- Lagrangian Sensor project receives Clean Tech Innovation prize,” Apr. 22, 2008
- *GPS Daily*, “Nokia and UC Berkeley capture real-time traffic information,” Feb. 12, 2008
- *TechGadgets.in*, “N95 phone gives real-time traffic info, thanks to Nokia and UC researchers,” Feb. 12, 2008
- *Dr. Dobb’s Portal*, “Cars and cell phones: maybe they’re not so bad after all,” Feb. 11, 2008
- *Largest Companies*, “Nokia & UC Berkeley capture real-time traffic info using GPS-enabled cell phones,” Feb. 11, 2008
- *Dvice*, “Nokia phone will steer you around traffic better than your fancy GPS system,” Feb. 11, 2008
- *CITRIS*, “Joint research project to capture traffic data,” Feb. 11, 2008
- *PhysOrg*, “New research project captures traffic data using GPS-enabled cell phones,” Feb. 10, 2008
- *Machines Like Us*, “Capturing traffic data using GPS-enabled cell phones,” Feb. 10, 2008
- *TechShout.com*, “Nokia and UC Berkeley experts build technology to offer real time traffic information,” Feb. 9, 2008
- *eFluxMedia*, “Nokia and UC Berkeley tests GPS phones as traffic sensors,” Feb. 9, 2008
- *Engadget*, “Nokia trial turns N95s into traffic sensing tools,” Feb. 9, 2008
- *Gizmodo*, “Nokia GPS phones to fight the traffic plague,” Feb. 9, 2008
- *Symbian Web Blog*, “Interesting GPS experiment by Nokia and UC Berkeley,” Feb. 9, 2008
- *eNews 2.0*, “Nokia tests a traffic-tracking service,” Feb. 9, 2008
- *Inside Bay Area*, “Area study tracks cell phones on highways to monitor traffic,” Feb. 9, 2008
- *Inside Bay Area*, “GPS phone system tested by students,” Feb. 9, 2008
- *TradingMarkets.com*, “Researchers test real-time traffic,” Feb. 9, 2008
- *Nokia Phone Blog*, “Nokia conducts real time traffic test,” Feb. 9, 2008
- *MobileTor.com*, “Nokia, UC researchers capture real-time traffic info using N95 handset,” Feb. 9, 2008
- *HardOCP*, “The Next Traffic Sensor is Your Phone,” Feb. 9, 2008
- *CanadaNOW*, “GPS Phones Used to Monitor Traffic,” Feb. 9, 2008
- *Reuters*, “Nokia and UC Berkeley capture real-time traffic information using GPS enabled mobile devices,” Feb. 8, 2008

- *The Tech Generation Daily*, “Nokia tracks traffic info with gang of GPS feeds,” Feb. 8, 2008
- *My Digital Life*, “Trend of having GPS enabled cell phones for traffic monitoring,” Feb. 8, 2008
- *IntoMobile*, “Mobile Century uses Nokia N95 as mobile GPS sensor,” Feb. 8, 2008
- *Inside Bay Area*, “Profs test tracking GPS phone to gauge traffic,” Feb. 8, 2008
- *Wireless and Mobile News*, “UCB & Nokia Test GPS for Traffic Flow and Monitoring,” Feb. 8, 2008
- *MobilEdia*, “Nokia and UC Berkeley Monitors Highway Traffic,” Feb. 8, 2008
- *MobiFrance*, “Interview avec Alexandre Bayen, chercheur et Professeur Francais at l’universite de Berkeley en Californie,” Feb. 4, 2008
- *Slashdot*, “Cellphones to Monitor Highway Traffic,” Feb. 3, 2008
- *ZD Net*, “Cell phones to monitor highway traffic,” Feb. 1, 2008

TALKS

Plenary / keynote speaker

1. *ACM SigSpatial*, International Workshop on Computational Transportation Science, San Francisco, Oct. 31, 2016: Keynote talk: “Distributed Learning Dynamics Convergence in Routing Games”.
2. *EC³ Stack-X meeting*, Lawrence Berkeley National Laboratory, Berkeley, CA, April 7 2015, Keynote lecture: “Distributed Learning Dynamics Convergence in Routing Games”.
3. *CPS20: CPS 20 years from now - visions and challenges*, CyPhERS 2nd Experts Workshop, CPSWeek 2014, Berlin, Germany, April 14 2014, Keynote lecture: “Games in transportation networks: leveraging the power of smartphones for traffic monitoring and management”.
4. *9th Annual Inter-University Symposium on Infrastructure Management*, UC Berkeley, June 7th, 2013, Keynote lecture: “Traffic information systems and traffic management systems at the age of the mobile internet and social networks”.
5. *Workshop on Mathematical Foundations of Traffic*, INRIA Sophia Antipolis, France, March 20, 2013, “Perspectives and trends in mathematical foundations for traffic engineering”.
6. *Supercomputing 2011*, Masterworks Presentation, Seattle Convention Center, Seattle, WA, Oct. 19, 2011, “Real-time estimation of distributed parameters systems: application to large scale infrastructure systems”.
7. *13th Annual Inventor Recognition Banquet*, NAVTEQ, The Rookery, Chicago, June 3, 2010, “Technology innovations at the age of web 2.0 and participatory sensing”.
8. *ARM TechCon³*, Santa Clara Convention Center, October 21, 2009, “Mobile Millennium: using GPS to reconstruct traffic”
9. *NAVTEQ Traffic Symposium*, Jacob K Javits Convention Center, New York, NY. November 17th, 2008, “Mobile Millennium: using GPS to reconstruct traffic”
The NAVTEQ Traffic Symposium coincides with the ITS World Congress and gathers about 200 academics and practitioners in the field of traffic monitoring and modeling.

Invited seminars, honorary lectures, named lectures

1. *University of Washington*, Seattle, WA, *Evans Lecture*, Department of Civil and Environmental Engineering, Host: Professor Greg Miller, “Distributed Learning Dynamics Convergence in Routing Games,” May 11, 2017
2. *University of Southern California*, Los Angeles, CA, Department of Industrial Engineering and Systems, Host, Professor Jong-Shi Pang “Distributed Learning Dynamics Convergence in Routing Games,”
3. *Cornell University*, *Ezra Lecture*, Department of Civil and Environmental Engineering, “Resilience and robustness of networks: from games to security,” Aug. 26, 2016
4. *Cornell University*, CAM Colloquium, Department of Industrial Engineering, “ Distributed Learning Dynamics Convergence in Routing Games,” Aug. 26, 2016
5. *UC Berkeley*, *Simons Institute for the Theory of Computing*, “*Real-Time Decision Making*”, June 29, 2016, Host: Professor Richard Karp, “Distributed Learning Dynamics Convergence in Routing Games”

6. *Massachusetts Institute of Technology (MIT), Cambridge, MA, IDSS Distinguished Seminar Series*, April 5, 2016, Host: Professor Munther Dahleh, “Distributed Learning Dynamics Convergence in Routing Games”
7. *University of California, Los Angeles*, Nov. 16, 2015, Host: Professor Christian Ratsch, IPAM, “ZUbers against ZLyfts Apocalypse: An Analysis Framework for DoS Attacks on Mobility-as-a-Service Systems”
8. *University of California, Davis, Institute of Transportation Studies*, May 1, 2015, Host: Professor Dan Sperling, “Nash-Stackelberg Games in Transportation Networks: Leveraging the Power of Smartphones for Traffic Monitoring and Management”
9. *Boston University, Department of Systems Engineering*, April 17, 2015, Host: Professor Mac Schwager, “Nash-Stackelberg Games in Transportation Networks: Leveraging the Power of Smartphones for Traffic Monitoring and Management”
10. *University of California, Berkeley, Urban Politics Seminar*, September 25, 2013, Host: Professor Alison Post, “Nash-Stackelberg Games in Transportation Networks: Leveraging the Power of Smartphones for Traffic Monitoring and Management”
11. *Georgia Tech, Department of Civil and Environmental Engineering*, February 19, 2013, Host: Professor Kari Watkins, “Nash-Stackelberg Games in Transportation Networks: Leveraging the Power of Smartphones for Traffic Monitoring and Management”
12. *King Abdulah University of Science and Technology*, November 27, 2012, Host: Professor Christian Claudel, “Nash-Stackelberg Games in Transportation Networks: Leveraging the Power of Smartphones for Traffic Monitoring and Management”
13. *University of Michigan, Department of Mechanical Engineering*, October 12, 2012, Host: Professor Gabor Orosz, “Nash-Stackelberg Games in Transportation Networks: Leveraging the Power of Smartphones for Traffic Monitoring and Management”
14. *UC Berkeley, Department of Mathematics*, April 4, 2012, Host: Professor Alexandre Chorin, “Estimation of Traffic Using Hamilton-Jacobi Equations”
15. *Intellisys – EEE Department*, Nanyang Technical University (NTU), Singapore, January 10, 2012, Host: Dr. Hock Beng Lim, “Real-time estimation of distributed parameters systems: Application to large scale infrastructure systems”.
16. *Lawrence Berkeley National Laboratories*, National Energy Research Scientific Computing Center (NERSC) seminar, February 4, 2011, Host: Professor Kathy Yelick, “Integration of Lagrangian sensor data into large scale hydrodynamic models”.
17. *University of California Office of the President*, Board Meeting, Berkeley, CA, October 27, 2010, Host: Professor Mark Yudof, “Mobile sensing in large scale infrastructure systems”.
18. *AMP Lab retreat*, Asilomar, CA, December 8, 2010, Host: Professor Michael Franklin, “Cloud based implementations of machine learning algorithms applied to traffic monitoring”.
19. *EECS Colloquium*, UC Berkeley, CA, September 29, 2010, Host: Professor Costas Spanos, “Real-time estimation of distributed parameters systems: application to large scale infrastructure systems”.
20. *CEMAGREF*, Montpellier, France, July 2, 2010, Host: Dr. Xavier Litrico, “Mobile Floating Sensor Network for Environmental Monitoring and Emergency Response”.
21. *Ecole Nationale des Ponts et Chaussees (ENPC), INRETS*, Marne la Vallee, France, July 1, 2010, Host: Professor Jean-Patrick Lebacque, “Mobile millennium: using smartphones to monitor traffic in privacy aware environments”.
22. *Royal Institute of Technology (KTH), Transportation and Logistics Division*, Stockholm, Sweden, April 16, 2010, Host: Professor Haris Koutsopoulos, “Mobile millennium: using smartphones to monitor traffic in privacy aware environments”.
23. *Berkeley Wireless Research Center (BWRC)*, UC Berkeley, Berkeley, CA, March 12, 2010, Host: Dr. Gary Kelson, “Mobile Millennium: using cell phones to monitor traffic”.
24. *Los Alamos National Laboratories (LANL)*, Los Alamos, NM, December 8th, 2009, Host: Dr. Scott Backhaus, “Mobile Millennium: using cell phones to monitor traffic”.
25. *UC Berkeley, EECS Department, TRUST Center*, September 10th, 2009, Host: Professor Shankar Sastry, “Mobile Millennium: using cell phones to monitor traffic”.

26. *Massachusetts Institute of Technology (MIT), Department of Civil and Environmental Engineering*, Cambridge, MA, July 31st, 2009, Host: Professor Moshe Ben-Akiva, "Data assimilation for real time traffic flow reconstruction".
27. *Palo Alto Research Center (PARC)*, Palo Alto, CA, July 9th, 2009. Host: Dr. Craig Eldershaw. "Mobile millennium: using smartphones to monitor traffic in privacy aware environments".
28. *University of California Los Angeles (UCLA), Department of Electrical Engineering, Center for Embedded Networked Sensing Seminar*, UCLA, CA, June 19th, 2009. Host: Professor Per Deborah Estrin. "Mobile Millennium" using cell phones to monitor traffic".
29. *California Institute of Technology, Control and Dynamical Systems seminar*, Pasadena, CA, June 18th, 2009. Host: Professor Jerry Marsden. "Mobile Millennium using cell phones to monitor traffic".
30. *Princeton University, Department of Mechanical and Aerospace Engineering, Controls Seminar*, Princeton, NJ, June 16th, 2009. Host: Professor Naomi Leonard. "Mobile Millennium using cell phones to monitor traffic".
31. *Stanford University, Department of Aeronautics and Astronautics, Controls Seminar*, Stanford, CA, May 20th, 2009. Host: Professor Per Enge. "Mobile Millennium using cell phones to monitor traffic".
32. *Microsoft Research Symposium*, Seattle, WA, May 14th, 2009. Host: Dr. Eric Horvitz. "Mobile Millennium: using cell phones to monitor traffic".
33. *University of California, Davis, Civil and Environmental Engineering Department, Transportation Seminar*, Davis, CA, April 10th, 2009. Host: Professor Michael Zhang. "Mobile Millennium: using cell phones to monitor traffic".
34. *Eidgenossische Technische Hochschule Zurich (ETHZ), Electrical Engineering Department*, Zurich, Switzerland, March 24th, 2009. Host: Professor Manfred Morari. "Mobile Millennium: using cell phones to monitor traffic".
35. *University of Illinois at Urbana Champaign, Electrical Engineering Department, Coordinated Science Laboratory*, Urbana-Champaign, IL, March 18th, 2009. Host: Professor Daniel Liberzon. "Mobile Millennium: using cell phones to monitor traffic".
36. *Georgia Institute of Technology, Decision and Control Laboratory*, Atlanta, GA, March 13th, 2009. Host: Professor Eric Feron. "Mobile Millennium: using cell phones to monitor traffic".
37. *University of Pennsylvania, Electrical Engineering Department, Robotics Seminar*, Philadelphia, PA, March 5th, 2009. Host: Professor George Pappas. "Mobile Millennium: using cell phones to monitor traffic".
38. *UC Berkeley, Mathematics Department, Applied Mathematics Seminar*, Berkeley, CA, February 20th, 2009. Host: Professor Jon Willkenig. "Construction of lower semi continuous solutions to the Hamilton-Jacobi equation with internal boundary conditions: application to highway traffic monitoring".
39. *UCSD, Mechanical and Aerospace Engineering Department, Control Seminar*, La Jolla, CA, February 13th, 2009. Host: Professor Miroslav Krstic. "Mobile Millennium: using cell phones to monitor traffic".
40. *UC Berkeley, EECS-CEE-ME, Control Seminar* Berkeley, CA, February 27th, 2009. Host: Professor Ruzena Bajcsy. "Mobile Millennium: using cell phones to monitor traffic".
41. *Northwestern University, Civil Engineering, Transportation Seminar*, Evanston, IL, December 4th, 2008. Host: Professor Marco Nie. "Mobile Millennium: using cell phones to monitor traffic".
42. *UC Berkeley, CITRIS Research Exchange*, UC Berkeley, CA, April 16th, 2008. Host: Professor Paul Wright. "Integrating Motion into Infrastructure using Cell Phones".
43. *UC Berkeley, CITRIS - ITS seminar*, UC Berkeley, CA, February 8th, 2008. Host: Professor Paul Wright. "Mobile century: using GPS mobile phones as traffic sensors".
44. *UC Berkeley, CEE Department, ITS seminar*, UC Berkeley, CA, December 14th, 2007. Host: Professor Mark Hansen. "Travel time estimation using probe vehicle data: the Nokia N95 experience".
45. *UC Berkeley, Mathematics Department, Applied Math Seminar*, UC Berkeley, CA, November 29, 2006. Host: Professor John Willkenig. "Control, estimation and simulation of dynamical systems using viability theory".
46. *UC Berkeley, CEE Department, ITS Seminar*. September 1,2006. Host: Professor Mark Hansen. "Network-based TFM optimization algorithms for aggregate flow models of the NAS".
47. *NASA AFC Air Traffic Management Seminar*. NASA Ames, Moffett Field, CA, July 31, 2006. Host: Dr. Banavar Sridhar. "Network-based TFM optimization algorithms for aggregate flow models of the NAS".

48. *University of Illinois at Urbana Champaign, Department of Aeronautics and Astronautics, Aerospace Seminar*. February 6, 2006. Host: Professor Natasha Neogi. “Approximation algorithms for arrival sequencing in congested airspaces”.
49. *UC Berkeley, IEOR Department, IEOR Seminar*. September 26, 2005. Host: Professor Max Shen. “Approximation Algorithms for Arrival Sequencing in Congested Airspaces”.
50. *UC Berkeley, CEE Department, ITS Seminar*. April 15, 2005. Host: Professor Mark Hansen. “Control of PDE Networks Via Adjoint-based Optimization: application to highways and air traffic control”.
51. *Ecole des Mines de Paris Seminar, Centre d’Automatique et des Systèmes (CAS), Control Seminar*. Fontainebleau, France, March 8, 2004. Host: Professor Nicolas Petit. “Adjoint-based constrained control of Eulerian models of transportation networks”.
52. *Institut Henri Poincaré, Viability Seminar*. Paris, France, March 2, 2004. Host: Professor Jean-Pierre Aubin, Université Paris Dauphine. “Adjoint-based constrained control of Eulerian models of transportation networks”.
53. *Stanford University, Department of Aeronautics and Astronautics, AA297 Seminar in Guidance and Control*. Stanford, CA, October 1, 2003. Host: Professor Steven Rock. “Computational control of networks of dynamical systems: application to the National Airspace System”.
54. *UC Berkeley, EECS Department, CHESS Seminar*. Berkeley, CA, October 7, 2003. Host: Professor Shankar Sastry. “Computational control of networks of dynamical systems: application to the National Airspace System”.
55. *UC Berkeley, EECS Department, CHESS Seminar*. Berkeley, CA, April 29, 2003. Host: Professor Shankar Sastry. “A short introduction to Viability Theory”.
56. *Stanford University, Mechanical Engineering Department, Mechanical Engineering Seminar*. Stanford, CA, April 22, 2003. Host: Professor Fritz Prinz. “Computational control of networks of dynamical systems”.
57. *NASA AFC Air Traffic Management Seminar*. NASA Ames, Moffett Field, CA, March 17, 2003. Host: Dr. Banavar Sridhar. “Computational control of networks of dynamical systems”.
58. *Massachusetts Institute of Technology, Department of Aeronautics and Astronautics, ICAT Seminar*. Cambridge, MA, April 9, 2003. Host: Professor Eric Feron. “Computational control of networks of dynamical systems”.
59. *Stanford University, CS Department, CS-theory lunch Seminar*. Stanford, CA, April 3, 2003. Host: Professor Mihalis Yannakakis. “Computational control of networks of dynamical systems”.
60. *Stanford University, MS&E Department, SOL Seminar*. Stanford, CA, April 2, 2003. Host: Professor Yinyu Ye. “Computational control of networks of dynamical systems”.
61. *NASA AFC Air Traffic Management Seminar*. NASA Ames, Moffett Field, October 21, 2002. Host: Dr. Banavar Sridhar. “MILP solutions for partial automation of congested airspaces in arrival areas”.
62. *Massachusetts Institute of Technology, Department of Aeronautics and Astronautics, ICAT Seminar*. Cambridge, MA, September 26, 2002. Host: Professor Eric Feron. “Mathematical and computational tools for hierarchical control of hybrid systems: application to the NAS”.
63. *NASA Air Traffic Management Seminar*. NASA Ames, Moffett Field, CA, July 29, 2002. Host: Dr. George Meyer. “Delay predictive models for sector-based air traffic flow”.
64. *University of Pennsylvania, EE Department, GRASP Seminar*. Philadelphia, PA, June 14, 2002. Host: Professor George Pappas. “Computational methods for hybrid systems, application to the National Airspace System”.

Industry and government talks

1. *Huawei*, Santa Clara, Jan. 11, 2017, “Mobile sensing for transportation and healthcare”
2. *LBNL ETA strategic review*, Jan. 11, 2017, “The sustainable transportation initiative”
3. *Bruce Meyer Salon*, Beverly Hills, Sep. 20, 2016, “The impact of new technology on mobility,,
4. *LBNL Advisory Board Meeting*, Lawrence Berkeley National Laboratory, June 2, 2016, “Transportation as a System”
5. *Big Ideas Summit*, Washington, DC, April 22, 2016, “Transportation as a System”

6. *Bay Area Legislative Caucus*, Sonoma, CA, Jan. 22, 2016, Host: Undersecretary Franklin Orr, DOE, "Transportation as a System"
7. *Oak Ridge National Laboratory (ORNL)*, Knoxville, TN, Nov. 9, 2015, "SMART Mobility: Decision Science"
8. *INRIX*, Seattle, WA, May 30, 2013, "Integration of mobile data in traffic management".
9. *California DOT*, Division of operations, Sacramento, CA, June 14, 2012, "Integrated Corridor Management".
10. *LA-Metro - California DOT CITRIS meeting*, Berkeley, CA, June 11, 2012, "Integrated Corridor Management".
11. *California DOT*, Division of operations, Sacramento, CA, May 25, 2012, "Integrated Corridor Management".
12. *NRC Committee on the future U.S. workforce for geospatial intelligence*, National Research Council, Irvine, CA, May 23, 2011, "Crowdsourcing and participatory sensing"
13. *California DOT*, Division of operations, Sacramento, CA, May 16, 2011, "Integrated Corridor Management".
14. *Delegation Paris Region Ile de France, Robert Lion*, UC Berkeley, CA, March 29, "Mobile Millennium"
15. *FWHA briefing*, [Webinar] Washington, DC, March 15, 2011, "Mobile Millennium: using phones as sensors"
16. *SIEMENS-Berkeley Meeting*, UC Berkeley, CA, March 9, 2011, "Next generation water sensors"
17. *SIEMENS-Berkeley Meeting*, UC Berkeley, CA, March 8, 2011, "Mobile Millennium: using phones as traffic sensors"
18. *Office for Naval Research*, Arlington, VA, January 28, 2010, "BASS: Buoyant Autonomous Sensor System".
19. *Banatao Board Meeting*, Palo Alto, CA, November 23, 2010, "Mobile sensing in large scale infrastructure systems".
20. *California Department of Transportation*, Sacramento, CA, November 17, 2010, "Future of data procurement policies".
21. *Orange Institute*, San Francisco, CA, November 15, 2010, "Mobile sensing in large scale infrastructure systems".
22. *INRIA-Berkeley meeting*. UC Berkeley, CA, November 12, 2010, "Mobile sensing in large scale infrastructure systems".
23. *California Department of Transportation*, Sacramento, CA, November 17, 2010, "ClearSky: real-time air quality monitoring system".
24. *Ericsson-CITRIS meeting*, Berkeley, CA, October 15, 2010, "Mobile Millennium, using phones as traffic sensors".
25. *The Bohemian Club*, San Francisco, CA, October 13, 2010, "Mobile Millennium, using phones as traffic sensors".
26. *Special forum of the UN General Assembly*, the New York Academy of Sciences / US Aid, New York, NY, September 22, 2010, "The Floating Sensor Network".
27. *T-Mobile-Berkeley Meeting*, UC Berkeley, September 16, 2010, "iShake: using smartphones to monitor earthquakes".
28. *IBM-Caltrans Meeting*, UC Berkeley, September 16, 2010, "Data fusion for traffic monitoring".
29. *Telenav*, Santa Clara, CA, September 15, 2010, "Data fusion for traffic monitoring".
30. *HP-CITRIS Meeting*, UC Berkeley, CA, September 10, 2010, "Mobile Millennium, using phones as traffic sensors".
31. *IBM-CITRIS Meeting*, UC Berkeley, CA, August 27, 2010, "Mobile Millennium, using phones as traffic sensors".
32. *Swedish DOT Meeting*, UC Berkeley, CA, August 5, 2010, "Mobile Millennium Stockholm".
33. *Department of Homeland Security*, Moffett Field, CA, February 11, 2010, "Mobile Sensing for traffic, environmental monitoring and emergency response".
34. *US Army Corps of Engineers*, Vicksburg, MI, January 11th, 2010, "Mobile Floating sensor network for environmental monitoring and emergency response".
35. *Agilent Technologies*, Santa Clara, CA, December 11th, 2009, "Mobile Millennium, using phones as traffic sensors".
36. *Polaris*, Santa Clara, CA, November 19th, 2009, "Mobile Millennium, using phones as traffic sensors".
37. *VOLPE Center (US DOT)*, Boston, MA, November 13th, 2009, "Mobile Millennium".
38. *NAVTEQ*, Chicago, IL, September 28th, 2009, "Mobile Millennium".

39. *T-Mobile labs*, Mountain View, CA, September 18th, 2009. "Mobile Millennium, using phones as traffic sensors".
40. *NAVTEQ*, Chicago, IL, July 23rd, 2009. "Mobile Millennium".
41. *BMW*, Palo Alto, CA, July 21th, 2009, "Mobile millennium: using smartphones to monitor traffic in privacy aware environments".
42. *NAVTEQ - UC Berkeley traffic workshop*, UC Berkeley, CA, July 10th, 2009, "Mobile millennium: using smartphones to monitor traffic in privacy aware environments".
43. *Energy Efficiency; Cyber-Physical Systems; Medical Devices & Systems*, Siemens Corporate Headquarters, Munich, Germany, May 28th, 2009. "Mobile Phones as Sensors for Improved Energy Efficiency".
44. *Siemens - Berkeley Day*, Siemens Corporate Headquarters, Munich, Germany, May 27th, 2009. "Mobile Phones as Sensors for Improved Energy Efficiency".
45. *VOLVO Centers of Excellence Symposium*, Gothenborg, Sweden, April 19th, 2009. "Mobile Millennium: using cell phones to monitor traffic".
46. *South Bay Traffic Officials Association (SBTOA)*, San Jose, CA, March 10th, 2009. "Mobile Millennium: using cell phones to monitor traffic".
47. *NAVTEQ*, Chicago, IL, December 4th, 2008. "Mobile Millennium: using cell phones to monitor traffic".
48. *NAVTEQ Traffic Symposium*, "Mobile Millennium: using GPS to reconstruct traffic", New York, NY. November 17th, 2008.
49. *California DOT meeting*, "Mobile Millennium: using cell phones to monitor traffic", Richmond Field Station, CA, August 12, 2008.
50. *ITS Board of Directors meeting*, "Mobile Millennium: using cell phones to monitor traffic", Richmond Field Station, CA, August 6, 2008.
51. *Department of Water Resources*, "Lagrangian drifter technology for monitoring the Sacramento Delta", Sacramento, CA, July 25, 2008.
52. *Boeing-Berkeley meeting*, "Aggregate traffic flow models for the en route airspace", UC Berkeley, July 15th, 2008.
53. *Ministere des Transports - California DOT meeting*, Richmond, CA, January 23, 2008. "Mobile Millennium: using cell phones to monitor traffic".
54. *Federal DOT, California DOT (Caltrans)*, Sacramento, CA, June 16, 2007. "Mobile Millennium kick off".
55. *Siemens confidential briefing*, UC Berkeley, CA, April 9, 2008. "Sensors for the aquatic environment".
56. *Federal DOT, California DOT (Caltrans)*, Richmond Field Station, CA, June 12, 2007. "Mobile Century Results".
57. *Nokia Research Center*, Palo Alto, CA, June 11, 2007. "Mobile Millennium".
58. *Siemens strategic visit*, UC Berkeley, CA, April 9, 2008. "Mobility tracking in large scale physical systems".
59. *Nokia Research Center*, Palo Alto, CA, November 15, 2007. "Real time traffic monitoring from GPS phones".
60. *California DOT (Caltrans)*, Sacramento, CA February 2, 2007. "Optimal sensor requirements for corridor instrumentation guidelines".
61. *NSF - NITRD Workshop*, Alexandria, VA, October 5, 2006. "NAS-wide traffic modeling software for traffic flow management High Confidence Software and Systems".
62. *Sensis corporation*, Campbell, CA, May 15, 2006. "Development of decision support tools for air traffic management".
63. *SAGEM*, Le Ponant de Paris, France, December 9, 2004. "Interactions between defense industry and academia".
64. *NASA Joint University Program Meeting*, UCLA, Los Angeles, CA, September 26, 2003. "Adjoint-based constrained control of Eulerian network models of the National Airspace System".
65. *Boeing - DARPA SEC Meeting*, Stanford University, CA, April 15, 2003. "Conflict avoidance using differential games: application to high altitude traffic".

66. *Ambassade de France (French Embassy)*, Washington D.C., June 13, 2002. “Computational methods for hybrid systems, application to multivehicle systems”.
67. *43th Aeronautics and Astronautics Industrial Affiliates Meeting*, Stanford University, CA April 23, 2002. “Delay predictive models of the National Airspace System”.
68. *DARPA Meeting*, Stanford University, CA, March 11, 2002. “Design of network maneuvers and actuation policies for the National Airspace System”.
69. *Dassault-Falconjet*, Saint-Cloud France, May 16, 2001. “Reachability computations for predictive models of dynamical systems and the National Airspace System”.

Talks at workshops, conferences, or meetings

1. *Transportation Research Board (TRB)*, as part of the *Low Carbon Transportation in Smart Cities* session, Washington, DC, Jan. 9, 2016
2. *The 5th International Workshop on Urban Computing (UrbComp 2016)* (as part of the 22th ACM SIGKDD 2016), “Distributed Learning Dynamics Convergence in Routing Games,” San Francisco, Aug. 14, 2016
3. *NSF FORCES Meeting*, “Resilience and robustness of networks: from games to security,” Boston, June 16, 2014
4. *France Berkeley Fund 20th Anniversary*, “Control and estimation of large scale infrastructure systems: water and traffic,” Berkeley, May 5, 2014
5. *Ecole Polytechnique*, “Studying in a US University, the example of UC Berkeley” Nov. 25, 2014
6. *NAE - NATF Frontiers of Engineering*, “Nash-Stackelberg Games in Transportation Networks: Leveraging the Power of Smartphones for Traffic Monitoring and Management,” Chantilly, France, Nov. 28, 2013
7. *PCARI IIID Symposium*, “Mobile Millennium Manila,” UC Berkeley, June 26, 2013
8. *Transportation Research Board*, Active Traffic Management: Technology, Data, and Users Session, “The Connected Corridor Program,” UC Berkeley, January 16, 2013
9. *SinBerBEST Annual General Meeting on January 2013*, National University of Singapore, “Sensing, Data Mining and Modeling,” January 9, 2013
10. *The 2012 Symposium on Emerging Topics in Control and Modeling: Networked Systems*, University of Illinois at Urbana Champaign, “Nash-Stackelberg Games in Transportation Networks: Leveraging the Power of Smartphones for Traffic Monitoring and Management,” October 15, 2012
11. *Transportation Research Board*, special COTA session, Washington, DC, “The Mobile Millennium experience,” January 22, 2012
12. *Transportation Research Board*, Washington, DC, “Best Practices and Lessons Learned Through Private Industry Partnerships with Public Agencies and Academia to Implement Research Results,” January 24, 2012
13. *Future Urban Mobility Symposium*, National University of Singapore (NUS), Singapore, January 12, 2012, “The Mobile Millennium Project”.
14. *SinBerBest Kickoff Workshop*, Nanyang Technical University (NTU), Singapore, January 11, 2012, “Sensing, Data Mining, and Modeling”.
15. *Pacific Earthquake Engineering Research Center Annual Meeting*, Berkeley, CA, October 15, 2011, “The floating sensor network”.
16. *Emerging Communications Conference (eComm)*, Millbrae, CA, June 28, 2011, “The phone to sense everything”.
17. *The 2011 Santa Barbara Control Workshop: Decision, Dynamics and Control in Multi-Agent Systems*, Santa Barbara, June 24, 2011, “Real-Time Estimation of Distributed Parameters Systems -Application to Large Scale Infrastructure Systems”.
18. *O’Reilly Where 2.0 Conference*, San Jose, CA, April 21, 2011, “A Real-Time Transportation Dashboard for Cities”.
19. *Workshop on Pervasive Data for Transportation*, Transportation Research Board (TRB), Washington, DC, January 23, 2010, “Mobile Millennium: using cell phones to monitor traffic”.

20. *Hyperbolic systems and control in networks*, Institut Henri Poincaré, Paris, France, October 20, 2010, “Optimization formulations for inverse modeling problems, with applications to Mobile Sensing”
21. *CITRIS review*, Berkeley, CA, October 25, 2010, “Mobile sensing in large scale infrastructure systems”.
22. *ICRA10 workshop on Robotics and Intelligent Transportation Systems*, Anchorage, AK, May 7th, 2010, “Mobile Sensing for traffic and environmental monitoring” [Talk delivered by Andrew Tinka].
23. *PATH-Tsinghua workshop*, PATH, Richmond Field Station, Richmond, CA, April 7th, 2010, “Mobile Millennium: using cell phones to monitor traffic”.
24. *AAAI Spring Symposia Series, Embedded Reasoning: Intelligence in Embedded Systems*, Stanford, CA, March 24th, 2010, “Mobile Millennium: using cell phones to monitor traffic”.
25. *2009 IEEE Conference on Decision and Control, Special SIAM session*, Shanghai, China, October 21st, 2009, “Dirichlet Problems for Some Hamilton-Jacobi Equations with Inequality Constraints”.
26. *Position and Time, 3rd Annual Symposium*, Stanford University, Stanford Center for Navigation, Stanford, CA, October 21st, 2009, “Mobile Millennium: using cell phones to monitor traffic”.
27. *TTI - Vanguard “More from Less”*, Jersey City, NJ, October 1st, 2009, “Mobile Millennium, using smartphones to monitor traffic”.
28. *2009 National Highway Data Workshop and Conference*, California Department of Transportation, Oakland, CA, September 23rd, 2009. “Mobile Millennium, using phones as traffic sensors
29. *CalDay College of Engineering Speaker*, UC Berkeley, Berkeley, CA, April 18th, 2009. “Mobile Millennium: using GPS to reconstruct traffic”.
30. *15th World Congress on ITS*, Safe trip 21 session, New York, NY, November 18th, 2008, “Mobile Millennium: using GPS to reconstruct traffic”.
31. *SUPERB seminar*, UC Berkeley, Berkeley, CA, July 3rd, 2008. “Mobile Millennium: using GPS to reconstruct traffic”.
32. *CalDay*, UC Berkeley, Berkeley, CA, April 11th, 2008. “Mobile Century Traffic Project: GPS in your cell phone”.
33. *Vincent Lo & Shanghai – CITRIS*, UC Berkeley, Berkeley, CA, November 14th, 2007. “Large scale infrastructure systems monitoring using cellular phones”.
34. *Nokia delegation meeting – CITRIS*, UC Berkeley, Berkeley, CA, November 7th, 2007. “Large scale infrastructure systems monitoring using cellular phones”.
35. *CITRIS - Tekes meeting*, UC Berkeley, Berkeley, CA, October 1, 2007 . “Large scale infrastructure monitoring using mobile sensor networks”.
36. *National Airspace System Performance Workshop*, Asilomar, Pacific Grove, CA, September 6th, 2007. “Network based optimization for TFM aggregate flow models”.
37. *HSCC 2007 satellite Workshop on modeling and control of physical networks*, Pisa, Italy, April 6, 2007. “Modeling and analysis of single flagellum bacterial motion”.
38. *CEE Advisory Council*, UC Berkeley, CA, May 3, 2007. “Control and optimization of large scale infrastructure systems”.
39. *NASA NGATS ATM airspace project first technical interchange Meeting*, NASA Ames, Moffett Field, CA, March 20, 2007. “A unified approach to strategic traffic flow models and performance evaluation for traffic flow management”.
40. *Transportation Research Board, Innovation in Air Traffic Management Workshop (TRB)*, Washington, DC, Jan. 21, 2007. “Fundamental research in Traffic Flow Management”.
41. *Optimization and Software in Air Traffic Management Tutorial Session*, part of the *45th IEEE Conference on Decision and Control*, San Diego, CA, December 12, 2006. “Linear Eulerian model of En-Route air traffic flow”.
42. *Optimization and Software in Air Traffic Management Tutorial Session*, part of the *45th IEEE Conference on Decision and Control*, San Diego, CA, December 12, 2006. “The Berkeley Eulerian Toolbox Modeling”.
43. *CTS-HYCON Workshop on nonlinear and hybrid control*, La Sorbonne University, Paris, France, July 12, 2006. Invited by the Conference Chair, Professor Françoise Lamnabhi-Larrigue. “Hybrid control of distributed parameter systems”.

44. *National Airspace System Performance Workshop*. Asilomar, Pacific Grove, CA, March 16, 2006. "Towards a scientific basis for determining En Route capacity".
45. *44th IEEE Conference on Decision and Control and European Control Conference*. Sevilla, Spain, December 14, 2005. "A viability approach to Hamilton-Jacobi equations: application to concave highway traffic flux functions".
46. *NSF CDATM Meeting*. University of Illinois at Urbana Champaign, Urbana, IL, December 1, 2005. "Distributed Air Traffic Management: Control and Optimization".
47. *FAA-NEXTOR Meeting*. UC Berkeley, Berkeley, CA, July 20, 2005. "Strategic traffic flow models based on data-mining and system-identification techniques".
48. *American Control Conference*. Portland, OR, June 10, 2005. "Computation and control of solutions to the Burgers Equation using viability theory".
49. *C3UV Seminar, CCIT*, UC Berkeley, Berkeley, CA, April 18, 2005. "Reachability and viability analysis for navigation in the presence of stereo vision errors".
50. *43rd IEEE Conference on Decision and Control*. Paradise Island, Nassau, Bahamas, December 16, 2004. "An approximation algorithm for scheduling aircraft with holding time".
51. *AIAA Conference on Guidance Control and Dynamics*. Providence, RI, August 18, 2004. "Optimal arrival traffic spacing via dynamic programming".
52. *American Control Conference*. Boston, MA, July 2, 2004. "Eulerian network model of Air Traffic Flow in congested areas".
53. *American Control Conference*. Boston, MA, July 2, 2004. "Adjoint based constrained control of Eulerian transportation networks: application to Air Traffic Control".
54. *Workshop on Abstractions and Robustness*, University of Pennsylvania, Philadelphia, PA, March 29, 2004. Invited by the Workshop Organizer, Professor Eric Feron. "PDE control using viability and reachability analysis".
55. *7th International Workshop Hybrid Systems Computation and Control*. University of Pennsylvania, Philadelphia, March 25, 2004. "Network congestion alleviation using adjoint hybrid control: applications to highways".
56. *42nd IEEE Conference on Decision and Control*. Maui, Hawaii, December 12, 2003. "MILP formulation and polynomial time algorithm for an aircraft scheduling problem".
57. *2003 ETHZ-UCB-Stanford Workshop*, Stanford, CA, December 5, 2003. "MILP formulation and polynomial time algorithm for an aircraft scheduling problem".
58. *AIAA Conference on Guidance Control and Dynamics*, Austin TX, August. 11, 2003. "A differential game formulation of alert levels in ETMS data".
59. *American Control Conference*. Denver, CO, June 6, 2003. "Real-time control law synthesis for hybrid systems using MILP: application to congested airspace".
60. *41st IEEE Conference on Decision and Control*. Las Vegas, NV, December 13, 2002. "Conditional viability for impulse differential games".
61. *41st IEEE Conference on Decision and Control*. Las Vegas, NV, December 13, 2002. "Viability Kernels and Capture Basins of Sets under Differential Inclusions".
62. *AIAA Conference on Guidance Navigation and Control*. Monterey, CA, August 8, 2002. "A control theoretic predictive model for sector-based traffic flow".
63. *Journées sur les systèmes hybrides*, Institut Henri Poincaré, Paris, France, June 27, 2002. Invited by the Conference Chair, Professor Jean-Pierre Aubin, Université Paris Dauphine. "Computational methods for hybrid systems, application to the National Airspace System".
64. *American Control Conference*. Anchorage, AK, May 8, 2002. "Delay predictive models of the National Airspace System using hybrid control theory".
65. *5th International Workshop Hybrid Systems Computation and Control*. Stanford, CA, March 25, 2002. "Guaranteed overapproximations of unsafe sets for continuous and hybrid systems".

66. *40th IEEE Conference on Decision and Control*. Orlando, FL, December 5, 2001. “A construction procedure using characteristics for viscosity solutions of the Hamilton-Jacobi equation”.
67. *4th International Workshop Hybrid Systems Computation and Control*. Rome, Italy, March 29, 2001. “Validating a Hamilton-Jacobi approximation to hybrid system reachable sets”.

RESEARCH GRANTS

Summary of research grants

The left table only includes grants for which I am the sole PI, or for which I am the PI for a multiple investigator grant. Please see additional sections below for additional sources of funding as a co-PI. The right table includes line items from the *Public Transportation Account* (left column), and ITS grants.

Year of award	Sole PI	PI	Total amount	ITS revenue	ITS PI
2005	\$5,400	\$381,565	\$386,965		
2006	\$537,999	\$991,990	\$1,529,989		
2007	\$703,151	Eur30,000; \$30,000	Eur30,000; \$733,151		
2008	\$2,627,500	\$0	\$2,627,500		
2009	\$500,558	\$658,283	\$1,158,841		
2010	\$3,431,619	\$75,000	\$3,506,619		
2011	\$15,133,306	\$109,391	\$15,242,697		
2012	\$282,982	\$0	\$282,982		
2013	\$169,375	\$101,471	\$2,083,703		
2014	\$0	\$78,579	\$78,579	\$705,717	
2015	\$152,332	\$0	\$152,332	\$705,717	\$507,350
2016	\$7,019,998	\$0	\$7,019,998	\$1,259,573	\$880,477
Totals:	\$30,564,220	\$2,426,279	\$32,990,499	\$2,671,007	\$1,387,827

Grants and donations obtained as a sole PI

- Al Falah program in Science and Engineering* FY17-18 \$7,500
Proposal title: “Large scale urban modeling for energy efficient planning and operations”
- Lawrence Berkeley National Laboratory*: FY 17-18 \$ 37,080
Proposal title: “LDRD project: High Performance Computing for Large-Scale Mobility Modeling?”
- Berkeley Deep Drive (BDD)*: FY 16-17 \$20,000
Proposal title: “Deep Reinforcement Learning based Optimization of Autonomous Vehicle Traffic”
- Lawrence Berkeley National Laboratory*: FY 15-16 \$400,000
Proposal title: “SPSA: ETA Priority Initiative on Transportation / LDRD: Transportation Systems Science”⁵
- California Department of Transportation*: FY 16-18 \$6,599,998
Proposal title: “Connected Corridors ICM2”
- Siemens*: FY 15-16, \$22,500
Proposal title: “SmartCampus.”
- France Berkeley Fund*: FY 15-16 \$11,500
Proposal title: “Monitoring of neurodisabled patients with connected wearables.”
- UCCONNECT: University of California Center on Economic Competitiveness in Transportation* FY 15-16 \$118,332
Proposal title: “SB-743: From LOS to VMT, VHT and beyond through data fusion: application to integrated corridor management.”
- Delta Science / Delta Stewardship Council / Sea Grant* FY 13-15 \$169,375
Proposal title: “How do shallow water habitats work? Using smart drifters to understand how flow and geomorphology interact to establish high quality habitats.”

⁵For administrative reasons, PI is LBNL Dr. Anand Gopal.

10.	<i>Google</i> FY 12-13 Faculty Research Award: “Arterial traffic patterns inference and map discovery from crowdsourced GPS data”	\$60,000
11.	<i>IBM</i> FY 12-13 Shared University Award: “Smartphone based road pricing”	\$15,000
12.	<i>University of California Transportation Center</i> FY 12-13 Proposal title: “Improve transit connectivity with incentives”	\$66,506
13.	<i>NAVTEQ</i> FY 12-13 Proposal title: “Predictive Arterial Traffic Flow from Probe Data”	\$131,476
14.	<i>France Berkeley Fund</i> FY 12-13 Proposal title: “Optimal Traffic Flow Management with GPS Enabled Smartphones”	\$10,000
15.	<i>California Department of Transportation</i> FY 11-14 Proposal title: “Research and Innovation for Traffic Operations”	\$14,971,306
16.	<i>NAVTEQ</i> . FY 11-12. Donation	\$12,000
17.	<i>Renault</i> . FY 11-12. Donation	\$150,000
18.	<i>California Department of Transportation</i> FY 10-11 Proposal title: “Collaboration with IBM on Multi-Sourced Traffic Information”	\$400,000
19.	<i>California Department of Transportation</i> FY 10-11 Proposal title: “Applied research”	\$52,821
20.	<i>Telenav</i> FY 10-11 Proposal title: “Using probes to produce highway traffic”	\$60,368
21.	<i>Scientific Systems Company, Inc. (SSCI)</i> (subcontract from the Navy) FY 10-11 Proposal title: “Buoyant Active Sensor System (BASS) For Riverine Mapping”	\$35,000
22.	<i>British Aerospace</i> (subcontract from DARPA) FY 10-12 Proposal title: “Flow-based Information Theory Tracking (FITT)”	\$810,122 ⁶
23.	<i>Ericsson</i> FY 10-11 Donation	\$55,000
24.	<i>California Department of Transportation</i> FY 10-11 Proposal title: “Pilot Procurement”	\$1,101,276
25.	<i>California Department of Transportation</i> FY 10-11 Proposal title: “Hybrid data roadmap objectives and methods”	\$897,032
26.	<i>National Science Foundation (NSF)</i> . FY 09-14. Proposal title: “CAREER: Lagrangian sensing in large scale cyber-physical infrastructure systems”	\$400,000
27.	<i>University of California Transportation Center (UCTC)</i> . FY 09-10. Proposal title: “Assessment of accessibility in urban environments with unpredictable transit systems”.	\$50,558
28.	<i>Nokia</i> . FY 09-10. Donation	\$50,000
29.	<i>Nokia</i> . FY 08-09. Donation	\$50,000
30.	<i>Nokia</i> . FY 08-09. Donation	\$75,000

⁶Reduced to \$250,000 because UC Berkeley refused to take 6.3 funding from DARPA, which led to a reduction in the awarded amount.

31. <i>Federal Department of Transportation (RITA)</i> . FY 08-09. Proposal title: "Mobile Millennium". ⁷	\$1,000,000
32. <i>California Department of Transportation</i> . FY 08-09. Proposal title: "RTA: Mobile Millennium".	\$1,350,000
33. <i>California Department of Transportation</i> . FY 08-09. Proposal title: "TO 1029: Mobile Millennium".	\$150,000
34. <i>Portuguese Studies Program</i> . FY 08-09. Proposal title: "Estuary surveys using active Lagrangian sensor networks".	\$2,500
35. <i>Nokia</i> (donation) and <i>UC Micro Grant</i> (matching funds). FY 07-08. Proposal title (for UC Micro Grant): "Highway traffic flow reconstruction using mobile phone data".	\$32,685
36. <i>UC Center for water resources</i> . FY 07-09. Proposal title: "Prototyping and testing of a Lagrangian sensor network for distributed monitoring in the Sacramento – San-Joaquin Delta".	\$59,993
37. <i>Academic Senate, UC Berkeley, COR</i> . FY 07-09. Proposal title: "Prototyping of a real-time systems for Lagrangian sensing".	\$5,000
38. <i>Finnish Funding Agency for Technology and Innovation (TEKES)</i> . FY 07-08. Donation.	\$30,000
39. <i>University of California Transportation Center (UCTC)</i> . FY 07-08. Proposal title: "Congestion control for highway network systems".	\$75,473
40. <i>California Department of Transportation</i> . FY 07-08. Proposal title: "TO 1021: Deployment of value-added mobile traffic probes".	\$500,000
41. <i>California Department of Transportation</i> . FY 06-08. Proposal title: "Optimal sensor requirements".	\$299,999
42. <i>National Aeronautics and Space Administration (NASA)</i> . FY 06-07. Proposal title: "Dynamic sectorization of the airspace".	\$38,000
43. <i>National Science Foundation (NSF)</i> . FY 06-09. Proposal title: "Embedded viability computing".	\$200,000
44. <i>Academic Senate, UC Berkeley, COR</i> . FY 05-06. Proposal title: "Control of large scale networks".	\$5,400

Grants obtained as the PI for a multiple investigator grant

1. <i>CITRIS</i> FY 14-15 Proposal title: "Monitoring of Alzheimer patients with connected wearables" Co-Investigator: Prof. DeCarli (UC Davis)	\$53,579
2. <i>CITRIS</i> FY 14-15 Proposal title: "Wearable based monitoring of daily activities for patients with Alzheimer Disease" Co-Investigator: Prof. Trevino (Tecnologico de Monterrey)	\$25,000
3. <i>NASA</i> FY 13-14 Proposal title: "Adaptive air traffic control for maximizing on time arrival under uncertain weather conditions". Co-investigator: Prof. Dengfeng Sun (Purdue Univ.)	\$101,471
4. <i>Dowling Associates Inc.</i> (flow through from FHWA) FY 11-12 Proposal title: "Transformational Changes and Revolutionary Advances for Transportation Planning". Co-investigators: Prof. Alexander Skabardonis (UC Berkeley, CEE)	\$109,391

⁷For contractual reasons, the award was given from the Federal Department of Transportation to the California Department of Transportation, under the name *Safe Trip 21*, for which Greg Larson at the California Department of Transportation is the PI. The grant is divided into two portions at Berkeley. I am the PI on this \$1,000,000 portion, called *Mobile Millennium* through the *California Center for Innovative Transportation* (CCIT).

5. *CITRIS*. FY 10-11 \$75,000
 Proposal title: “Floating Century”.
 Co-investigators: Prof. Mark Stacey (UC Berkeley, CEE), Prof. Geoff Schladow (UC Davis, CEE)
6. *CITRIS*. FY 09-10 \$75,000
 Proposal title: “iShake: early warning with smartphones”.
 Co-investigators: Prof. Richard Allen (Earth & Plan. Sci.), Prof. Steve Glaser (CEE), Prof. Jon Bray (CEE)
7. *Nokia*. FY 09-12. \$300,000
 Proposal title: “Real-time sensor-data driven traffic health impact assessment”.
 Co-investigators: Prof. Steven Glaser (UC Berkeley, CEE), Dr. Edmund Seto (UC Berkeley, School of Public Health)
8. *California Department of Transportation*. FY 07-08. \$30,000
Ministère des Transports, France (matching funds). FY 07-08. Eur30,000
 Proposal title: “Highway traffic flow reconstruction using mobile phone data”.
 Co-investigators: Prof. Patrick Saint-Pierre, Université Paris Dauphine, France.
9. *National Science Foundation*. FY 09-12. \$283,283
 Proposal title: “Physical modeling and software synthesis for self-reconfigurable sensors in river environments”.
 Co-investigators: Prof. Jonathan Sprinkle (University of Arizona, ECE), Professor Sonia Martinez (UCSD, MAE)
10. *National Aeronautics and Space Administration (NASA)*. FY 06-09. \$991,990
 NASA Research Opportunities in Aeronautics (NRA), NNH06ZEA001N-AS
 Proposal title: “A unified approach to strategic models and performance evaluation for traffic flow management”.
 Co-investigators: Prof. Mark Hansen (UC Berkeley, CEE), Dr. Robert Hoffman (Metron Aviation).
11. *National Aeronautics and Space Administration (NASA)*. FY 05-07. \$381,565
 NASA Research Opportunities in Aeronautics (NRA), NNH06ZEA001N-AS
 Proposal title: “Traffic flow investigation”.
 Co-investigators: Prof. Mark Hansen (UC Berkeley, CEE), Prof. Mike Ball (University of Maryland), Prof. Dave Lovell (University of Maryland).

Grants obtained as a co-PI on multiple investigator grants

1. *National Science Foundation* FY 13-18 \$9,300,000
 Budget for co-PI Bayen: FY 12-13 ~\$60,000/yr.
 Proposal title: “Collaborative Research: Foundations Of Resilient CybEr-physical Systems (FORCES)”
 Co-investigators: Prof. Shankar Sastry, PI, (EECS), Prof. Claire Tomlin, (EECS), Prof. Saurabh Amin (MIT CEE), Prof. Janos Stipanovic (Vanderbilt, EECS), et al.
2. *National Research Foundation (NRF), Singapore* FY 11-16 \$57,000,000
 Budget for co-PI Bayen: ~\$2,000,000.
 Proposal title: SinBerBest: Energy Efficient Buildings in the Tropical Climates
 Co-investigators: Prof. Costas Spanos (EECS), Khalid Mosalam (CEE), Bill Nazaroff (CEE), Claire Tomlin (EECS), Claudia Ostertag (CEE), Kameshwar Poolla (ME) et al.
3. *National Science Foundation* FY 11-16 \$10,000,000
 Budget for co-PI Bayen: ~\$30,000/yr.
 Proposal title: “Algorithms Machine People (AMP)”
 Co-investigators: Prof. Michael Franklin, PI, (EECS), Prof. Ion Stoica (EECS), Prof. Randy Katz (EECS), Prof. Michael Jordan (EECS), Prof. Ken Goldberg (IEOR), et al.
4. *Various donors (consortium)*⁸ FY 13-18 ~\$5,000,000
 Budget for co-PI Bayen: FY 12-13 ~\$30,000/yr.
 Proposal title: “Collaborative Research: Foundations Of Resilient CybEr-physical Systems (FORCES)”
 Co-investigators: Prof. Michael Franklin, PI, (EECS), Prof. Ion Stoica (EECS), Prof. Randy Katz (EECS), Prof. Michael Jordan (EECS), Prof. Ken Goldberg (IEOR), et al.
5. *INRIA* FY 12-13 Eur 30,000
 Budget for co-PI Bayen: FY 12-13 Eur 15,000
 Proposal title: “Optimal Traffic Flow Management with GPS Enabled Smartphones”
 Co-investigators: Prof. Paola Goatin, INRIA, France

⁸Include in particular: Amazon, Google, SAP, Cisco, Ericsson, Facebook, Huawei, Intel, Microsoft, Oracle, Quantan Samsung, VMWare, Yahoo!

6. *California Department of Transportation. FY 12-13* \$1,716,472
 Budget for co-PI Bayen: FY 12-13 \$100,000
 Proposal title: “Tools for Operations Planning (TOPL5): Traffic Management, Decision Support System and I-680 CSMP Support”
 Co-investigators: Prof. Roberto Horowitz (PI, ME), Prof. Pravin Varaiya (EECS)
7. *CITRIS. FY 09-10.* \$72,570.52
 Budget for co-PI Bayen: FY 09-10. ~\$30,000
 Proposal title: “CITRIS seed grant: Delivering earthquake warnings using smartphones”.
 Co-investigator: Prof. Richard Allen (PI, Berkeley Earth & Planetary Science)
8. *US Geological Survey (USGS). FY 09-10.* \$99,872
 Budget for co-PI Bayen: FY 09-10. ~\$50,000
 Proposal title: “*iShake*: using personal devices to deliver rapid, semi quantitative earthquake information”.
 Co-investigator: Prof. Jonathan Bray (PI, Berkeley CEE), Prof. Steven Glaser (CEE Berkeley)
9. *NASA. FY 07-09.* \$966,966
 Budget for co-PI Bayen: FY 07-09. ~\$120,000
 NASA Research Opportunities in Aeronautics (NRA), NNH06ZEA001N-AS
 Proposal title: “Advanced stochastic network queuing models of the impact of 4D trajectory precision on aviation systems performance”.
 Co-investigator: Prof. Mark Hansen (PI, Berkeley CEE), Prof. Michael Ball, Prof. David Lovell (Univ. of Maryland), Prof. Amedeo Odoni (MIT).
10. *CALFED: California Bay-Delta Authority FY 07-09.* \$390,869
 Budget for co-PI Bayen: FY 07-09. ~\$180,000
 Proposal title: “Calibration-free approach to modeling”.
 Co-investigator: Prof. Mark Stacey (PI, Berkeley CEE).
11. *FAA: Federal Aviation Administration. FY 06-07.* \$541,464
 Budget for co-PI Bayen: FY 06-07. ~\$50,000
 Proposal title: “Assessment of en-route sector performance and operational concept evaluation using fast-time computational model of human performance”.
 Co-investigator: Prof. Mark Hansen (PI, Berkeley CEE).
12. *National Aeronautics and Space Administration (NASA). FY 06-09.* \$1,300,000
 Budget for co-PI Bayen: FY 06-09. ~\$180,000
 NASA Research Opportunities in Aeronautics (NRA), NNH06ZEA001N-AS
 Proposal title: “Integrating collision avoidance and tactical air traffic control tools”.
 Co-investigators: Prof. Claire Tomlin (PI, Stanford), Prof. Shankar Sastry (Berkeley), Prof. Jason Speyer (UCLA), Dr. Dallas Denery (UCSC), Dr. Heinz Erzberger (UCSC).
13. *California Department of Transportation. FY 05-07.* \$244,000
 Budget for co-PI Bayen: FY 05-07. ~\$60,000
 Proposal title: “Development of a practical computer tool for dynamic origin destination matrices estimation”.
 Co-investigators: Prof. Samer Madanat (PI, UC Berkeley, CEE), Prof. Michael Zhang (UC Davis), Prof. Yafeng Yin (University of Florida).

Other sources of support

Over the years, the following companies, institutions or administrations have contributed around \$3,000,000 either as funds, as salary for members of my research group, or in kind (for example, equipment):

- *Monetary contributions:* Direction Generale de l'Aviation Civile, MEDAAT, Ministere de l'Agriculture (France), Ministere de l'Industrie et des Transports (France), Nokia, University of Lindkoping (Sweden), US Department of Transportation Eisenhower Fellowship program.
- *In kind contributions:* BTS, Cabspotting, IBM, ITERIS, NAVTEQ, Nokia, TSS, Telenav, Roadify, Stamen Design, Waze

Grants obtained for ITS teams

ITS funding comes from two sources (beyond the research grants, not counted here). (1) Funds from the *Public Transportation Account* (PTA) as an appropriation from the Governor's Budget (SB826 for 2016). (2) Grants to support ITS activities. It serves ITS Berkeley, Davis, Irvine and UCLA

Public Transportation Account funding (all ITS units):

Fiscal year 2014	\$980,000 (ITS Berkeley: \$705,717)	PTA
Fiscal year 2015	\$980,000 (ITS Berkeley: \$705,717)	PTA
Fiscal year 2016	\$3,980,000 (ITS Berkeley: \$1,259,573)	PTA and SB826

ITS Grants for UC Berkeley

1. *California Office of Traffic Safety* FY 14-15 \$507,350
Proposal title: "Safety Assessment for California Communities"
Co-investigator: Laura Melendy (Tech Transfer)
2. *California Office of Traffic Safety* FY 15-16 \$280,000
Proposal title: "Safety Assessment for California Communities"
Co-investigator: Laura Melendy (Tech Transfer)
3. *California Department of Transportation* FY 15-17 \$600,477
Proposal title: "Tribal Safety Assessment for Indian Nations in California"
Co-investigator: Laura Melendy (Tech Transfer)