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Department of Information Technology and Electrical Engineering
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1 Personal Data

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Education

- Dec 2011 University of California, Berkeley, USA
Doctor of Philosophy in Engineering
Thesis: Optimal control of hybrid systems in air traffic applications
- May 2005 University of Waterloo, Canada
Bachelor of Applied Science
Major: Systems Design Engineering

2 Academic and Professional Positions

Apr 2016 - today	Assistant professor Automatic Control Laboratory, ETH Zürich
May 2012 - Mar 2016	Postdoctoral fellow Automatic Control Laboratory, ETH Zürich
May - Aug 2009	NASA Ames Research Center, Moffett Field, CA, USA Internship in the Aviation Systems Division Analyzed and synthesized fuel efficient aircraft arrival procedures
May - Aug 2004	Applied Mathematics Department, University of Waterloo, Canada Research Internship in the Control and Dynamical Systems Group Controlled an inverted pendulum under uncertain communication delay
Jan - Jul 2003	MDS Sciex, Toronto, Canada Internship in the Software Development Department Developed spectral arithmetic software for a mass spectrometer
May - Aug 2001	Sunnybrook Hospital & Women's College, Toronto, Canada Internship in the Research Department Designed an image processing software for an ultrasound machine

3 List of Publications

Here, * denotes authors with equal contribution.
Preprints and under review articles are provided.

Journals

- J1. O. Karaca and M. Kamgarpour, *Core-Selecting Mechanisms in Electricity Markets*, 2018, under review, available at <https://arxiv.org/abs/1811.09646>
- J2. Y. Zheng, M. Kamgarpour, A. Sootla and A. Papachristodoulou, *Distributed Design for Decentralized Control using Chordal Decomposition and ADMM*, 2018, under review
- J3. T. Tatarenko and M. Kamgarpour, *Minimizing Regret in Bandit Online Optimization in Unconstrained and Constrained Action Spaces*, 2018, under review, available at <https://arxiv.org/abs/1806.05069>
- J4. D. Gonzalez-Arribas, M. Soler, M. Sanjurjo-Rivo, M. Kamgarpour and J. Simarro, *Robust Aircraft Trajectory Planning under Uncertain Convective Environments with Optimal Control and Rapidly Developing Thunderstorms*, provisionally accepted, 2018
- J5. D. Frick*, P.G. Sessa*, T. A. Wood and M. Kamgarpour, *Exploiting structure of chance constrained programs via submodularity*, 2018, to appear, available at <https://arxiv.org/abs/1801.03258>
- J6. D. Hentzen, M. Kamgarpour, M. Soler and D. Gonzalez-Arribas, *On Maximizing Safety in Stochastic Aircraft Trajectory Planning with Uncertain Thunderstorm Development*, Aerospace Science & Technology, 2018, to appear, available at <https://arxiv.org/abs/1806.02396>
- J7. O. Karaca, P. G. Sessa, N. Walton and M. Kamgarpour, *Designing Coalition-Proof Reverse Auctions over Continuous Goods*, 2018, provisionally accepted, available at <https://arxiv.org/abs/1711.06774>
- J8. L. Frieri and M. Kamgarpour, *The Value of Communication in Synthesizing Controllers given an Information Structure*, 2018, provisionally accepted, available at <https://arxiv.org/abs/1711.05324>
- J9. F. Rey, X. Zhang, S. Merkli, V. Agliati, M. Kamgarpour and J. Lygeros, *Strengthening the Group - Aggregated Frequency Reserve Bidding with ADMM*, IEEE Transactions on Smart Grid, 2018, accepted, available at <https://arxiv.org/abs/1711.00320>
- J10. T. Tatarenko and M. Kamgarpour, *Learning Generalized Nash Equilibria in a Class of Convex Games*, IEEE Transactions on Automatic Control, 2018, accepted, available at <https://arxiv.org/abs/1703.04113>
- J11. B. Gentile, F. Parise, D. Paccagnan, M. Kamgarpour and J. Lygeros, *Nash and Wardrop equilibria in aggregative games with coupling constraints*, IEEE Transactions on Automatic Control, 2018, accepted, available at <https://arxiv.org/abs/1702.08789>
- J12. N. Kariotoglou, M. Kamgarpour, T. H. Summers and J. Lygeros, *The Linear Programming Approach to Reach-Avoid Problems for Markov Decision Processes*, Journal of Artificial Intelligence Research, 60:263-284, 2017, available at <https://arxiv.org/abs/1411.5925>

- J13. D. Frick, T. A. Wood, G. Ulli and M. Kamgarpour, *Robust Control Policies given Formal Specifications in Uncertain Environments*, Systems & Control Letter, 1(1):20-25, 2017, available at <https://arxiv.org/abs/1703.03319>
- J14. M. Kamgarpour, T. A. Wood, S. Summers and J. Lygeros, *Control Synthesis for Stochastic Systems given Automata Specifications defined by Stochastic Sets*, Automatica, 76:177-182, 2017
- J15. X. Zhang, M. Kamgarpour, A. Georghiou, P. Goulart and J. Lygeros, *Robust Optimal Control with Adjustable Uncertainty Sets*, Automatica, 75:249-259, 2017
- J16. M. Soler, M. Kamgarpour, J. Lloret and J. Lygeros, *A Hybrid Optimal Control Approach to Fuel Efficient Aircraft Conflict Avoidance*, IEEE Transactions on Intelligent Transportation Systems, 17(7):1826-1838, Jul 2016
- J17. J. L. Mathieu, M. Kamgarpour, J. Lygeros, G. Andersson and D. S. Callaway, *Arbitraging Intraday Wholesale Energy Market Prices with Aggregations of Thermostatic Loads*, IEEE Transactions on Power Systems, 30(2):763-772, Mar 2015
- J18. S. Summers*, M. Kamgarpour*, C. Tomlin and J. Lygeros, *Stochastic System Controller Synthesis for Reachability Specifications Encoded by Random Sets*, Automatica, 49(9):2906-2910, 2013
- J19. J. Ding*, M. Kamgarpour*, S. Summers, A. Abate, J. Lygeros and C. Tomlin, *A Stochastic Games Framework for Verification and Control of Discrete Time Stochastic Hybrid Systems*, Automatica, 49(9):2665-2674, 2013
- J20. W. Zhang, M. Kamgarpour, D. Sun and C. Tomlin, *A Hierarchical Flight Planning Framework for Air Traffic Management*, Proceedings of the IEEE, 100(1):179-194, 2012
- J21. M. Kamgarpour and C. Tomlin, *On Optimal Control of Non-Autonomous Switched Systems under a Fixed Switching Sequence*, Automatica, 48(6):1177-1181, 2012

Book chapters

- B1. P. G. Sessa* , D. Frick* , T. A. Wood and M. Kamgarpour, *From Data to Robust Policies for Temporal Logic Planning*, Hybrid Systems: Computation and Control, ACM Lecture Notes in Computer Science, pp.157-166, Porto, Portugal, Apr 2018, available at <https://arxiv.org/abs/1801.03663>
- B2. B. Gentile, F. Parise, D. Paccagnan, M. Kamgarpour and John Lygeros, *A game theoretic approach to decentralized charging of plug-in electric vehicles*, Challenges in Engineering and Management of Cyber-Physical Systems of Systems, 2016, under review
- B3. M. Kamgarpour, S. Summers and J. Lygeros, *Control Design for Property Specifications on Stochastic Hybrid Systems*, In C. Belta and F. Ivancic, editors, Hybrid Systems: Computation and Control, ACM Lecture Notes in Computer Science, pp.303-312, Philadelphia, PA, USA, Apr 2013
- B4. S. Summers, M. Kamgarpour, C. Tomlin and J. Lygeros, *A Stochastic Reach-Avoid Problem with Random Obstacles*, In E. Frazzoli and R. Grosu, editors, Hybrid Systems: Computation and Control, ACM Lecture Notes in Computer Science, pp.251-260, Chicago, IL, USA, Apr 2011
- B5. H. Gonzalez, R. Vasudevan, M. Kamgarpour, S. Sastry, R. Bajcsy and C. Tomlin, *Computable Optimal Control of Switched Systems with Constraints*, In K. H. Johansson and W. Yi, editors, Hybrid Systems: Computation and Control, ACM Lecture Notes in Computer Science, pp.51-60, Stockholm, Sweden, Apr 2010

Peer-reviewed conference proceedings

- C1. V. Lefkopoulos and M. Kamgarpour, *Using uncertainty data in chance-constrained trajectory planning*, European Control Conference, 2018, to appear
- C2. T. Summers and M. Kamgarpour, *Performance guarantees for greedy maximization of non-submodular set functions in systems and control*, European Control Conference, 2018, to appear
- C3. L. Furieri, Y. Zheng, A. Papachristodoulou and M. Kamgarpour, *On Separable Quadratic Lyapunov Functions for Convex Design of Distributed Controllers*, European Control Conference, 2018, to appear
- C4. I. Usmanova, A. Krause and M. Kamgarpour, *Safe convex learning under uncertain constraints*, AISTATS - International Conference on Artificial Intelligence and Statistics, Naha, Okinawa, Japan, 2019
- C5. P. G. Sessa, M. Kamgarpour and A. Krause, *Bounding Inefficiency of Equilibria in Continuous actions games using submodularity and curvature*, AISTATS - International Conference on Artificial Intelligence and Statistics, Naha, Okinawa, Japan, 2019
- C6. L. Furieri and M. Kamgarpour, *Synthesizing Robust Distributed Controller Beyond Quadratic Invariance*, IEEE Conference on Decision and Control, 2018, to appear
- C7. O. Karaca and M. Kamgarpour, *Exploiting weak supermodularity for coalition-proof mechanisms*, IEEE Conference on Decision and Control, 2018, to appear, available at <https://arxiv.org/abs/1803.11030>
- C8. A. Elahidoost, E. Tedeschi, L. Furieri and M. Kamgarpour, *Reducing HVDC Network Oscillations Considering Wind Intermittency in View of Grid Expansion Decision*, IEEE Energy Conversion Congress and Exposition, Portland, OR, USA, Sep 2018, to appear
- C9. T. Tatarenko and M. Kamgarpour, *Minimizing Regret in Unconstrained Online Convex Optimization*, European Control Conference, Limassol, Cyprus, Jun 2018, to appear
- C10. Y. Zheng, M. Kamgarpour, A. Sootla and A. Papachristodoulou, *Scalable analysis of linear networked systems via chordal decomposition*, European Control Conference, Limassol, Cyprus, Jun 2018, to appear, available at <https://arxiv.org/abs/1803.05996>
- C11. A. Elahidoost, L. Furieri, M. Kamgarpour and E. Tedeschi, *Optimizing HVDC Grid Expansion and Control for Enhancing DC Stability*, Power Systems Computation Conference, Dublin, Ireland, Jun 2018, to appear
- C12. L. Furieri and M. Kamgarpour, *Robust Control of Constrained Systems given an Information Structure*, IEEE Conference on Decision and Control, pp.3481-3486, Melbourne, Australia, Dec 2017
- C13. O. Karaca and M. Kamgarpour, *Game Theoretic Analysis of Electricity Market Auction Mechanisms*, IEEE Conference on Decision and Control, pp.6211-6216, Melbourne, Australia, Dec 2017
- C14. D. Frick, T. A. Wood, G. Ulli and M. Kamgarpour, *Robust Control Policies given Formal Specifications in Uncertain Environments*, IEEE Conference on Decision and Control, pp.3481-3486, Melbourne, Australia, 2017
- C15. D. G. Gonzalez-Arribas, D. Hentzen, M. Sanjurjo-Rivo, M. Soler and M. Kamgarpour, *Optimal Aircraft Trajectory Planning in the Presence of Stochastic Convective Weather Cells*, AIAA Aviation Conference, Denver, CO, USA, Jun 2017

- C16. P. G. Sessa, N. Walton and M. Kamgarpour, *Exploring the Vickrey-Clarke-Groves Mechanism for Electricity Markets*, IFAC World Congress, 50(1):189-194, Toulouse, France, Jul 2017
- C17. T. Tatarenko and M. Kamgarpour, *Payoff-based approach to learning Nash equilibria in convex games*, IFAC World Congress, 50(1):1508-1513, Toulouse, France, Jul 2017
- C18. M. Kamgarpour and T. Summers, *On infinite dimensional linear programming approach to stochastic control*, IFAC World Congress, 50(1): 6148-6153, Toulouse, France, Jul 2017
- C19. T. Summers, C. Li and M. Kamgarpour, *Information Structure Design in Team Decision Problems*, IFAC World Congress, 50(1): 2530-2535, Toulouse, France, Jul 2017, available at <https://arxiv.org/abs/1706.05572>
- C20. F. Farshidian, M. Kamgarpour, D. Pardo and J. Buchli, *Sequential Linear Quadratic Optimal Control for Nonlinear Switched Systems*, IFAC World Congress, 50(1): 1463-1469, Toulouse, France, Jul 2017
- C21. B. Gentile, D. Paccagnan, F. Parise, M. Kamgarpour and J. Lygeros, *Distributed computation of generalized Nash equilibria in quadratic aggregative games with affine coupling constraints*, IEEE Conference on Decision and Control, pp.6123-6128, Las Vegas, USA, Dec 2016
- C22. M. Kamgarpour, C. Beyss and A. Fuchs, *Nonlinear Reachability and Optimal Control Synthesis for Power System Stability*, IFAC Conference on Control of Transmission and Distribution Grid, 49(27):238-243, Prague, Czech Republic, Oct 2016
- C23. T. A. Wood and M. Kamgarpour, *Automaton-Based Stochastic Control for Navigation of Emergency Rescuers in Buildings*, Multi-conference on Control, pp.587-592, Buenos Aires, Argentina, Aug 2016
- C24. M. Kamgarpour and T. Summers, *Stochastic Control: A Moment Approach to Sparse Control Design*, Mathematical Theory of Networked Systems, pp.279-282, Minneapolis, Minnesota, Jul 2016
- C25. D. Držajić, N. Kariotoglou, M. Kamgarpour and J. Lygeros, *A Semidefinite Programming Approach to Control Synthesis for Stochastic Reach-Avoid Problems*, Applied Verification for Continuous and Hybrid Systems, EPiC Series in Computing, 43:134-143, 2017
- C26. D. Paccagnan, M. Kamgarpour and J. Lygeros, *On Aggregative and Mean Field Games with Applications to Electricity Markets*, European Control Conference, pp.196-201, Aalborg, Denmark, Jul 2016
- C27. D. Paccagnan, M. Kamgarpour and J. Lygeros, *On the Range of Feasible Power Trajectories for a Population of Thermostatically Controlled Loads*, IEEE Conference on Decision and Control, pp.5883-5888, Osaka, Japan, Dec 2015
- C28. X. Zhang*, E. Vrettos*, M. Kamgarpour and J. Lygeros, *Stochastic Frequency Reserve Provision by Chance-constrained Control of Commercial Buildings*, European Control Conference, pp.1134-1140, Linz, Austria, Jul 2015
- C29. X. Zhang, M. Kamgarpour, P. Goulart and J. Lygeros, *Selling Robustness Margins: A Framework for Optimizing Reserve Capacities for Linear Systems*, IEEE Conference on Decision and Control, pp.6419-6424, Los Angeles, CA, USA, Dec 2014
- C30. F. Heer, P. Mohajerin Esfahani, M. Kamgarpour and J. Lygeros, *Model Based Power Optimisation of Wind Farms*, European Control Conference, pp.1145-1150, Strasbourg, France, Jun 2014
- C31. M. Soler, M. Kamgarpour and J. Lygeros, *A Numerical Framework and Benchmark Case study for Multi-modal Fuel Efficient Aircraft Conflict Avoidance*, International Conference on Research in Air Transportation, Istanbul, Turkey, May 2014

- C32. M. Maasoumy, P. Nuzzo, F. Iandola, M. Kamgarpour, C. Tomlin and A. Sangiovanni-Vincentelli, *Optimal Load Management System for Aircraft Electric Power Distribution*, IEEE Conference on Decision and Control, pp.2939-2945, Florence, Italy, Dec 2013
- C33. M. Kamgarpour, C. Ellen, S. Esmail Zadeh Soudjani, S. Gerwinn, J. L. Mathieu, N. Müllner, A. Abate, D. S. Callaway, M. Fränzle and J. Lygeros, *Modeling Options for Demand Side Participation of Thermostatically Controlled Loads*, IREP Bulk Power System Dynamics & Control Symposium, Rithymna, Crete, Greece, Aug 2013
- C34. M. Kamgarpour and H. Tembine, *A Bayesian Mean Field Game Approach to Supply Demand Analysis of the Smart Grid*, IEEE Black Sea Conference on Communications and Networking, pp.196-200, Batumi, Georgia, Jul 2013
- C35. J. L. Mathieu, M. Kamgarpour, J. Lygeros and D. S. Callaway, *Energy Arbitrage with Thermostatically Controlled Loads*, European Control Conference, pp.303-312, Zürich, Switzerland, Jul 2013
- C36. N. Kariotoglou, S. Summers, T. Summers, M. Kamgarpour and J. Lygeros, *Approximate Dynamic Programming for Stochastic Reachability*, European Control Conference, pp.584-589, Zürich, Switzerland, Jul 2013
- C37. T. H. Summers, K. Kunz, N. Kariotoglou, M. Kamgarpour, S. Summers and J. Lygeros, *Approximate Dynamic Programming via Sum of Squares Programming*, European Control Conference, pp.191-197, Zürich, Switzerland, Jul 2013
- C38. B. Svetozarevic, P. Mohajerin Esfahani, M. Kamgarpour and J. Lygeros, *A Robust Fault Detection and Isolation Filter for a Horizontal Axis Variable Speed Wind Turbine*, American Control Conference, pp.4453-4458, Washington, DC, USA, Jun 2013
- C39. M. Soler, M. Kamgarpour, C. Tomlin and E. Staffetti, *Multiphase Mixed-Integer Optimal Control Framework for Aircraft Conflict Avoidance*, IEEE Conference on Decision and Control, pp.1740-1745, Maui, HI, USA, Dec 2012
- C40. M. Kamgarpour*, J. Ding*, S. Summers, A. Abate, J. Lygeros and C. Tomlin, *Discrete-Time Stochastic Hybrid Dynamical Games: Verification and Controller Synthesis*, IEEE Conference on Decision and Control, pp.6122-6127, Orlando, FL, USA, Dec 2011
- C41. M. Kamgarpour, W. Zhang and C. Tomlin, *Modeling and Optimization of Terminal Airspace and Aircraft Arrival subject to Weather Uncertainties*, AIAA Guidance, Navigation and Control Conference, pp.6516-6521, Portland, OR, USA, Oct 2011
- C42. M. Kamgarpour, M. Soler, C. Tomlin, A. Olivares and J. Lygeros, *Hybrid Optimal Control for Aircraft Trajectory Design with a Variable Sequence of Modes*, IFAC World Congress, pp.7238-7243, Milan, Italy, Aug 2011
- C43. W. Zhang, M. Kamgarpour, D. Sun and C. Tomlin, *Decentralized Flight Path Planning for Air Traffic Management*, American Control Conference, pp.2137-2142, San Francisco, CA, USA, Jun 2011
- C44. H. Gonzalez, R. Vasudevan, M. Kamgarpour, S. Sastry, R. Bajcsy and C. Tomlin, *A Numerical Method for the Optimal Control of Switched Systems*, IEEE Conference on Decision and Control, pp.7519-7526, Atlanta, GA, USA, Dec 2010
- C45. M. Kamgarpour, V. Dadok and C. Tomlin, *Trajectory Generation for Multiple Aircraft subject to Dynamic Weather Uncertainty*, IEEE Conference on Decision and Control, pp.2063-2068, Atlanta, GA, USA, Dec 2010

- C46. J. Robinson and M. Kamgarpour, *Benefits of Continuous Descent Operations in High-Density Terminal Airspace under Scheduling Constraints*, AIAA Aviation Technology, Integration and Operations Conference, pp.1-21, Fort Worth, TX, USA, Sep 2010
- C47. M. Kamgarpour and C. Tomlin, *Modeling and Analysis of Cell Differentiation using Hybrid Systems*, American Control Conference, pp.4355-4360, Baltimore, MD, USA, Jun 2010
- C48. M. Kamgarpour and C. Tomlin, *Convergence Properties of a Decentralized Kalman Filter*, IEEE Conference on Decision and Control, pp.3205-3210, Cancun, Mexico, Dec 2008
- C49. S. Jackson, J. Tisdale, M. Kamgarpour, B. Basso and K. Hedrick, *Tracking Controllers for Small UAVs with Wind Disturbances: Theory and Flight Results*, IEEE Conference on Decision and Control, pp.3205-3210, Cancun, Mexico, Dec 2008

4 Doctoral and Master's Students

The research topic of each student is provided below their names. The start date of the doctoral students and the end date of the Master's students are provided.

Doctoral students

Jul 2018	Yimeng Lu	Stochastic control algorithms for emergency search & rescue missions
May 2018	Pier Giuseppe Sessa	Learning in dynamic multi-agent systems with applications to robotics
Sep 2017	Ilnura Osmanova	Data-driven safe learning and control synthesis with applications to rescue robotics
Nov 2016	Luca Furieri	Distributed and multi-agent control synthesis with applications to power systems
Oct 2016	Orcun Karaca	Game theory and mechanism design with applications to electricity markets

Master's students

Apr 2019	Baiwei Guo	Control design for resilient networks
Nov 2017	Pier Giuseppe Sessa	Temporal logic control synthesis in probabilistic environments
Dec 2016	Jeremias Seitz	Optimal HVDC control for transient stability of the power system
Aug 2015	Hanmin Cai	Modeling and control of electric water heaters and heat pumps
Aug 2015	Christoph Stäheli	Primal and dual semidefinite algorithms for stochastic control
May 2015	Claudia Beyss	Reachability and optimal control of power systems
Mar 2015	Adrian Gomez	Control of distributed electric water heaters for ancillary services
Jul 2015	Adria Moler	Multi-objective real-time path planning for emergency building evacuation
Sep 2013	Flavio Heer	Model based power optimization of wind farms

5 Honors and Awards

- 2016 European Research Council Starting Grant (EUR 1,346,438)
- 2013 Top 20 ETH Zürich Inventions of the Year
- 2010 NASA High Potential Individual Award
- 2010 NASA Excellence in Publications Award
- 2008 Alexander Graham Bell Award, NSERC (CAD 63,000)
- 2005 Entrance Fellowship, University of California at Berkeley (USD 26,000)
- 2005 Ontario Graduate Scholarship, Canada (CAD 15,000)
- 2004 Undergraduate Research Award, NSERC
- 2000 Engineering Entrance Scholarship, University of Waterloo (CAD 3,000)
- 2000 René Descartes Mathematics Scholarship, University of Waterloo (CAD 18,000)
- 2000 Excellence in Community Book Award, North Vancouver, Canada
- 2000 12th in Canada, 1st in British Columbia, Canadian Open Mathematics Contest
- 1994 1st in Iran in National Science Competition

* NSERC: Natural Sciences & Engineering Research Council of Canada

6 Acquired Funding

I am the sole author and principal investigator of the first three proposals. They support my research and my doctoral students. I co-authored the last proposal during my postdoctoral work. It supported a multi-partner project as well as my own postdoctoral work.

- 2018-2021 ETH Zürich Project, CHF 203,000
Real-time Navigation Aid in Emergency Building Evacuation
- 2017-2021 Swiss National Science Foundation, CHF 441,478
Data-driven Stochastic Control for Search and Rescue Missions
- 2016-2020 European Research Council Starting Grant, EUR 1,346,438
Control of Large-scale Uncertain Systems for Renewable Energy Integration
- 2013-2017 Swiss Nano-Tera Initiative, Multi-partner Project, CHF 3,242,504
Thermal Loads for Ancillary Services in the Power System

7 Seminars and Presentations

The following list includes invited seminars and excludes conference presentations.

- Feb 2019 The Mathematics of Energy Systems, Isaac Newton Institute, Cambridge, UK
invited speaker in the track “Future Electricity Markets”
- Feb 2019 Future Electric Power Systems and the Energy Transition, Champéry, Switzerland
invited speaker
- Jul 2018 International congress of mathematical optimization (ISMP), Bordeaux, France
- Jun 2018 Summer School on Modern Optimization in Energy Systems, DTU, Denmark
invited course instructor
- Jun 2018 Mediterranean Control Conference, Zadar, Croatia
invited plenary speaker
- May 2018 Center for Operations Research and Econometrics, UC Louvain, Belgium
- May 2018 Department of Automatic Control, KTH, Sweden
- May 2018 Seminar Series at IBM Research, Zurich
- May 2018 Electrical and Computer Engineering, The University of British Columbia, Canada
- Oct 2017 Workshop on Uncertainty and Air Traffic Management, Madrid, Spain
- Oct 2017 IEEE Symposium on Control of Network Systems, Boston, USA
- Jun 2016 Munich Aerospace Summer School, Munich, Germany
- Apr 2016 Control Systems Group, The University of Oxford, Oxford, England
- Dec 2015 Energy for a Smarter World Conference, EPFL, Lausanne, Switzerland
- Feb 2015 ABB Corporate Research, Baden, Switzerland
- Oct 2014 Dagstuhl Workshop, Schloss Dagstuhl, Germany
- May 2014 Mechanical Engineering, The University of Queensland, Brisbane, Australia
- Jun 2013 Electrical Engineering, TU Delft, The Netherlands
- Apr 2012 Aeronautics & Astronautics, University of Washington, Seattle, WA, USA
- Mar 2011 Transportation Research Forum, Long Beach, CA, USA
- Jan 2011 Women in Aerospace Symposium, MIT, USA
- Jul 2009 SIAM Optimization & Control Conference, Denver, CO, USA

8 Service to the Academic Community

Professorship selection and doctoral theses committees

- Jan 2018 Professorship selection committee
Professorship in Embedded Information Systems, D-ITET, ETH Zürich
- Jan 2018 Professorship selection committee
Professorship in Computer Science, D-INFK, ETH Zürich
- May 2019 Doctoral committee examiner
Candidate: Lesia Marie-Jeanne Mariane Mitridati, Technical University of Denmark
- Apr 2017 Doctoral committee examiner
Candidate: Olivier Megel, ETH Zürich, Switzerland
- Feb 2017 Doctoral committee examiner
Candidate: Tatiana Tatarenko, TU Darmstadt, Germany

Organization of seminars

- Jul 2015 Organized a mini-symposium, SIAM Conference on Control & its Applications
Computational Approaches to Large Scale Stochastic Systems
- Jul 2013 Co-organized a workshop, European Control Conference
Generation and Load Side Control for Power Systems with Stochastic Uncertainty
- Jul 2013 Co-organized an invited session, European Control Conference
Verification & Control of Stochastic Hybrid Systems
- 2006-2008 Initiated and organized a biweekly seminar series, UC Berkeley
Control & Dynamics Reading Group

Journal review activities

Recognition as outstanding reviewer, IEEE Control Systems Letters, 2018

- IEEE Transactions on Automatic Control
- IEEE Transactions on Automation Science and Engineering
- IEEE Transactions on Control Systems Technology
- IEEE Transactions on Smart Grid
- IEEE Transactions on Control of Network Systems
- Automatica
- Nonlinear Analysis: Hybrid Systems

Conference program committees

- Hybrid Systems: Computation and Control, 2019

9 Leadership and Mentoring Services

- Mar 18, 2019 Fix the leaky pipeline, Bern, Switzerland
Encouraging women scientists to become professors
- Mar 14, 2019 D-ITET “Taster Day”, ETH Zürich
Representing the department to high school student visitors
- Sep 13, 2018 ETH Week: “Energy Matters”, ETH Zürich
Providing feedback to students on their problems and solution approaches
- Dec 1, 2017 High school female students’ visit (Schülerinnentag), ETH Zürich
Represented D-ITET department to visiting female students
- Feb 7, 2017 High school students’ visit day (ETH Tag), ETH Zürich
Represented D-ITET department to visiting high school students
- 2013-2015 The Academic Association of Scientific Staff (AVETH), ETH Zürich
Represented postdoctoral fellows and senior scientific staff
Initiated career planning workshops for scientific staff
- 2007-2011 Graduate Women in Engineering, UC Berkeley, USA
Guided incoming female doctoral students in course selection and exams
- 2006-2011 Technology for Girls (TechGyrls), YWCA Berkeley, USA
Developed engineering lesson plans for elementary school girls
Taught engineering skills in weekly after school programs
- 2004-2005 Engineers Without Border, University of Waterloo Chapter, Canada
Organized speaker series on engineering solutions for the developing world
Organized shipping of computers for youths in Philippines
- 1999-2000 Multiculturalism Committee, Vancouver, Canada
Tutored children of newly immigrated families in school work

10 Teaching Activities

- Springs 2017-19 Game Theory with Engineering Applications, co-lecturer
Information Technology & Electrical Engineering Department, ETH Zürich
- Falls 2015-18 Linear System Theory, lecturer and course organizer
Information Technology & Electrical Engineering Department, ETH Zürich
- Falls 2012-14 Linear System Theory, head teaching assistant and coordinator
Information Technology & Electrical Engineering Department, ETH Zürich
- Spring 2011 Hybrid Systems, Teaching assistant
Electrical Engineering & Computer Sciences Department, UC Berkeley
Designed course projects and mentored students on their projects
- Spring 2008 Nonlinear Control Systems, Guest lecturer
Electrical Engineering and Mechanical Engineering Departments, UC Berkeley
Developed and taught four lectures on nonlinear controllability and observability
- Spring 2006 Intermediate Dynamics, Graduate student instructor
Mechanical Engineering Department, UC Berkeley
Taught 2 hours per week, designed and corrected assignments
- Fall 2005 Calculus 2, Graduate student instructor
Mathematics Department, UC Berkeley
Taught 3 hours per week, designed and corrected of assignments