

Berkeley, February 2016

## Curriculum Vitae

### Education

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- Jan 2011 – present      PhD Candidate, Department of Electrical Engineering and Computer Sciences, University of California, Berkeley (GPA: 4.0)
- Hybrid Systems Lab, Academic advisor: Professor Claire Tomlin
  - Minors: Economics and Statistics
  - Research expertise: Control Theory, Optimization, Game Theory, Mechanism Design, Economic Incentives, Online Learning Algorithms, Machine Learning
- Spring 2016      M.A., Mathematics, University of California, Berkeley (expected; GPA: 4.0)
- Fall 2012      Management of Technology certificate, Haas School of Business, UC Berkeley
- Oct 2005 – Aug 2010      Diploma degree in Electrical Engineering and Information Technology, Darmstadt University of Technology, Germany. (GPA: 1.04, with distinction)
- Aug 2008 – Jun 2009      Education abroad program, Department of Mechanical Engineering, UC Berkeley (GPA: 4.0)

### Work Experience

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- May 2015 – Aug 2015      Internship, Core Data Science, Facebook, Menlo Park, CA
- Developed theory and algorithms for adaptive sampling in online experiments based on contextual multi-armed bandit formulations
- Sep 2010 – Dec 2010      Consultant for Siemens Management Consulting (SMC), Munich, Germany
- Benchmarking project, Industry Sector; responsible for sales & service module
  - Worked directly with clients to source and analyze competitor information
- Jun 2009 – Oct 2009      Internship, Robert Bosch GmbH, Schwieberdingen, Germany
- Predevelopment group for automatic transmission control systems

### Teaching Experience

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- Fall 2014      GSI for EE 221A: Linear Systems Theory, EECS Department, UC Berkeley
- Fall 2013      GSI for EE 128: Feedback Control Systems, EECS Department, UC Berkeley
- Outstanding GSI award
- 2006 – 2008      Teaching Assistant for various classes at Darmstadt University of Technology (incl. electrical engineering, engineering mechanics & controls)

### Volunteer Work and Other Experience

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- May 2014 – present      Member, UC Berkeley Scientific Diving Program
- PADI Divemaster (#360611), AAUS licensed scientific diver
- May 2012 – Dec 2012      Volunteer, Prison University Project, San Quentin State Prison, CA
- Taught Mathematics and Physics to prisoners pursuing an associate degree
- Jul 2004 – Mar 2005      Military service, German Federal Armed Forces Infantry Training Battalion 353, Hammelburg, Germany. Rank: Obergefreiter (private first class)

## Scholarships and Honors

- Alumnus, Studienstiftung des Deutschen Volkes (German National Academic Foundation)
- Alumnus, Capstone Mentoring Program, McKinsey & Co., Germany
- Alumnus, Scholarship Program of Robert Bosch GmbH
- Pepperl+Fuchs Award 2008 for the best Diploma degree in Electrical Engineering and Information Technology at Darmstadt University of Technology
- International Studies award 2008, Rotary-Club Darmstad-Bergstraße
- Foreign Exchange Scholarship 2008, German Academic Exchange Service

## Publications

**M. Balandat**, D. Zhou and C. Tomlin. *Estimating Individual Treatment Effects from Observational Data: A Machine Learning Approach*. In preparation.

D. Zhou, **M. Balandat** and C. Tomlin. *Residential Demand Response Targeting Using Machine Learning with Observational Data*. In preparation.

C. Campaigne, **M. Balandat**, L. Ratliff and S. Oren. *Quantifying the Social Cost of Adverse Incentives from Baseline-Dependent Demand Response*. In preparation.

**M. Balandat**, W. Krichene, A. Bayen, and C. Tomlin: *Minimizing Regret on Reflexive Banach Spaces and Learning Nash Equilibria in Continuous Zero-Sum Games*. Submitted to Conference on Learning Theory (COLT), 2016.

W. Krichene, **M. Balandat**, C. Tomlin, and A. Bayen: *Dual Averaging on L2 Spaces and No-Regret Learning on a Continuum*. Submitted to International Conference on Machine Learning (ICML), 2016.

W. Krichene, **M. Balandat**, C. Tomlin and A. Bayen. *The Hedge Algorithm on a Continuum*. In International Conference on Machine Learning (ICML), Jul 2015, Lille, France.

**M. Balandat**, I. Tkachev, A. Abate and C. Tomlin, *A Mean Field Equilibrium for a Model of Interbank Lending*, American Control Conference (ACC), Jul 2015, Chicago, IL, USA.

**M. Balandat**, F. Oldewurtel, M. Chen and C. Tomlin, *Contract Design for Frequency Regulation by Aggregations of Commercial Buildings*, in Allerton Conference on Communication, Control, and Computing, Oct 2014.

**M. Balandat** and C. Tomlin, *A Dynamic VCG Mechanism for Random Allocation Spaces*, in 51st Annual Allerton Conference on Communication, Control, and Computing, Oct 2013.

**M. Balandat** and C. Tomlin, *On Efficiency in Mean Field Differential Games*, in American Control Conference (ACC), June 2013, Washington, DC, USA.

**M. Balandat**, W. Zhang and A. Abate, *On Infinite Horizon Switched LQR Problems with State and Control Constraints*, Systems & Control Letters, vol. 61, no. 4, 2012.

**M. Balandat**, *Interpolation in Output-feedback Tube-based Robust MPC*, in 50th IEEE Conference on Decision and Control and European Control Conference (CDC-ECC), Dec 2011, Orlando, FL, USA.

**M. Balandat**, Wei Zhang and A. Abate, *On the Infinite Horizon Constrained Switched LQR problem*, in 49th IEEE Conference on Decision and Control (CDC), Dec 2010, Atlanta, GA, USA.

**M. Balandat**, *Constrained Robust Optimal Trajectory Tracking: Model Predictive Control Approaches*, Diploma Thesis, Technische Universität Darmstadt, 2010.

References available upon request.