

## Intersections between Control, Learning and Optimization

### Monday February 24, 2020

- 8:00–8:55 *Check-in/Breakfast (hosted by IPAM)*
- 8:55–9:00 *Welcome & Opening Remarks: Dean Miguel García-Garibay (Dean of Physical Sciences, UCLA) and Dima Shlyakhtenko (Director, IPAM)*
- 9:00–9:50 **Moritz Diehl** (University of Freiburg)  
*Convexity Exploiting Newton-Type Optimization for Learning and Control*
- 10:00–10:15 *Break*
- 10:15–11:05 **Dimitri Bertsekas** (Massachusetts Institute of Technology and Arizona State University)  
*Distributed and Multiagent Reinforcement Learning*
- 11:15–11:30 *Break*
- 11:30–12:20 **Csaba Szepesvari** (University of Alberta)  
*Model misspecification in reinforcement learning*
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Necmiye Ozay** (University of Michigan)  
*A fresh look at some classical system identification methods*
- 3:30–4:00 *Break*
- 4:00–4:50 **Mengdi Wang** (Princeton University)  
*On the statistical complexity of reinforcement learning*
- 5:00–6:30 *Poster Session & Reception (Hosted by IPAM)*

### Tuesday February 25, 2020

- 8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*
- 9:00–9:50 **Russell Tedrake** (Massachusetts Institute of Technology)  
*From pixels to torques: output feedback for robotics*
- 10:00–10:15 *Break*
- 10:15–11:05 **Martin Riedmiller** (DeepMind Technologies)  
*Learning Control from Minimal Prior Knowledge*
- 11:15–11:30 *Break*

*(Tuesday schedule continued on next page)*



*(Tuesday schedule continued from previous page)*

- 11:30–12:20 **Ben Recht** (University of California, Berkeley (UC Berkeley))  
*Trying to Make Sense of Control from Pixels*
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Emma Brunskill** (Stanford University)  
*Curbing Our Enthusiasm: Constraining Decision Policies Learned from the Past to Ensure Good Futures*
- 3:30–4:00 *Break*
- 4:00–4:50 **Anca Dragan** (University of California, Berkeley (UC Berkeley))  
*Learning Intended Cost Functions: Extracting all the right information from all the right places*

### Wednesday February 26, 2020

- 8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*
- 9:00–9:50 **Andreas Krause** (ETH Zurich)  
*Safe and Efficient Exploration in Reinforcement Learning*
- 10:00–10:15 *Break*
- 10:15–11:05 **Daniel Kuhn** (École Polytechnique Fédérale de Lausanne (EPFL))  
*Wasserstein Distributionally Robust Optimization: Theory and Applications in Machine Learning*
- 11:15–11:30 *Break*
- 11:30–12:20 **Zico Kolter** (Carnegie Mellon University)  
*Integrating optimization, constraints, and control within deep learning models*
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Melanie Zeilinger** (ETH Zurich)  
*Learning-based Model Predictive Control - Towards Safe Learning in Control*
- 3:30–4:00 *Break*
- 4:00–4:50 **Francesco Borrelli** (University of California, Berkeley (UC Berkeley))  
*Sample-Based Learning Model Predictive Control*

### Thursday February 27, 2020

- 8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*
- 9:00–9:50 **Maryam Fazel** (University of Washington)  
*Finite-sample System Identification: Optimal Rates and the Role of Regularization*
- 10:00–10:15 *Break*

*(Thursday schedule continued on next page)*

*(Thursday schedule continued from previous page)*

- 10:15–11:05 **Richard Murray** (California Institute of Technology)  
*Can We Really Use Machine Learning in Safety Critical Systems?*
- 11:15–11:30 *Break*
- 11:30–12:20 **Dorsa Sadigh** (Stanford University)  
*Beyond Theory of Mind: Learning and Influencing Conventions in Multi-Agent Interactions*
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **James Rawlings** (University of California, Santa Barbara (UCSB))  
*Industrial, large-scale model predictive control with deep neural networks*
- 3:30–4:00 *Break*
- 4:00–4:50 **Stephen Wright** (University of Wisconsin-Madison)  
*Nonconvex optimization in matrix optimization and distributionally robust optimization*

## Friday February 28, 2020

- 8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*
- 9:00–9:10 **Rohit Kannan** (University of Wisconsin-Madison)  
*Predict, then smart optimize with stochastic programming*
- 9:15–9:25 **Sungho Shin** (University of Wisconsin-Madison)  
*A Unifying Framework for Subspace Identification and Dynamic Mode Decomposition*
- 9:30–9:40 **Victor Magron** (Laboratoire d'analyse et d'architecture des systèmes (LAAS-CNRS))  
*Polynomial Optimization for Bounding Lipschitz Constants of Deep Networks*
- 9:45–9:55 **Jia-Jie Zhu** (Max Planck Institute for Intelligent Systems)  
*Distributionally Robust Optimization and Control using RKHS Embedding*
- 10:00–10:15 *Break*
- 10:15–11:05 **Lieven Vandenberghe** (University of California, Los Angeles (UCLA))  
*Bregman proximal methods for semidefinite optimization.*
- 11:15–11:30 *Break*
- 11:30–12:20 **Angela Schoellig** (University of Toronto)  
*Machine Learning for Robotics: Achieving Safety, Performance and Reliability by Combining Models and Data in a Closed-Loop System Architecture*
- 12:30 *Conclusion*

