Optimization and Control of Networks: From Theory to Practice
Reunion Workshop on Prof. Steven Low's 60th Birthday
May 24-25, 2024
Beckman Behavioral Biology Labs, Room B180
California Institute of Technology

Friday, May 24, 2024

7:45 am–8:30 am: **Breakfast**

8:30 am–8:35 am: **Welcome Remarks by L. Chen and N. Li**
8:35 am–8:40 am: **Remarks by S. Low**

Session I
Session chair: L. Chen
8:45 am–9:30 am: **Keynote I: Learning and Control in Countable State Spaces**
                            R. Srikant, University of Illinois at Urbana Champaign
9:30 am–10:00 am: **Global Networks for Data Intensive Sciences: the Innovations**
                            and Key Roles of Steven Low
                            H. Newman, California Institute of Technology

10:00 am–10:25 am: Coffee break

Session II
Session chair: J. Anderson

10:25 am–10:40 am: Large-Scale Optimization of Convex-Concave Games in Networks
                            C. W. Tan ('2009), Nanyang Technological University
10:40 am–10:55 am: Load Balancing at Google
                            B. Wydrowski ('2005), Google
10:55 am–11:10 am: Resource Management in AI/ML Systems
                            Z. Liu ('2014), Stony Brook University

11:10 am–11:15 am: **Short break**

11:15 am–11:30 am: Privacy & Security of Learning Algo: A Control Theory Perspective
                            K. Dvijotham ('2016), Google Brain
11:30 am–11:45 am: Humans vs. Autonomous Systems: Robustness and Intelligence
                            Y. Nakahira ('2019), Carnegie Mellon University
11:45 am–12:00 pm: LLM Training
                            D. Wei ('2006), Turing

12:00 pm–1:30 pm: **Lunch**

Session III
Session chair: N. Li

1:30 pm–2:15 pm: **Keynote II: Analyzing Spatially Distributed EV Charging Dynamics**
                            with Optimization and Duality (Steven's Way)
                            F. Paganini, Universidad ORT Uruguay
2:15p m–2:45 pm: **A Decade of Sustainable Data Centers**
                            A. Wierman, California Institute of Technology

2:45 pm–3:00 pm: **Coffee break**

Session chair: G. Qu

3:00 pm– 3:15pm:	**How Much Should We Trust ML Agents in Power Systems?**
	T. Li ('2022), Chinese University of Hong Kong, Shenzhen
3:15 pm–3:30 pm:	**Market Power & Withholding Behavior of Energy Storage Units**
	J. Anderson ('2019), Columbia University
3:30 pm–3:45 pm:	**Dollar, Second, and kg CO2**
	M. Chen, City University of Hong Kong
3:45 pm–4:00 pm:	**Coffee break**
4:00 pm–5:15 pm:	**Startup Panel: Crossing the Gap**
	C. Jin ('2005, PowerFlex), G. Lee ('2011, PowerFlex), K. Tang ('2006, Cornell University), D. Wei ('2006, Turing), S. Low (Caltech, moderator)
6:00 pm–9:30 pm:	**Reception and dinner (The Athenaeum, by Invitation Only)**

Host: Z. Low

6:00 pm:	**Reception**
6:15 pm:	**Group photo**
6:30 pm:	**Special Keynote: My Favorite Architect** (J. Doyle, Caltech)
7:15 pm:	**Remarks by S. Low**
7:20 pm:	**Dinner**

Saturday, May 25, 2024

8:00 am–8:50 am:	**Breakfast**

Session V
Session chair: Z. Liu

8:50 am–9:20 am:	**Decarbonize Energy System**
	S. Low, California Institute of Technology
9:20 am–9:35 am:	**Caltech Digital Twin: a Distribution System Model and Testbed**
	Y. Xie (current), California Institute of Technology
9:35 am–9:50 am:	**ML with Guarantees for Energy and Sustainability**
	N. Christianson (current), California Institute of Technology
9:50 am–10:00 am:	**Short break**
10:00 am–10:15 am:	**Distributionally Robust Regret Optimal Control**
	E. Bitar ('2012), Cornell University
10:15 am–10:30 am:	**Structure Exploiting Multi-Agent Reinforcement Learning**
	G. Qu ('2021), Carnegie Mellon University
10:30 am–10:45 am:	**Closing the Loop: From Data to Action in Physical Systems**
	N. Li ('2013), Harvard University
10:45 am–11:00 am:	**Coffee break**
11:00 am–12:00 pm:	**Random updates (all)**
12:00 pm–1:00 pm:	**Lunch**
1:00 pm–5:00 pm:	**Huntington Library tour, Echo mountain hiking**