

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

2:15 pm–2:45 pm: A Decade of Sustainable Data Centers

A. Wierman, California Institute of Technology

2:45 pm–3:00 pm: Coffee break

Session IV

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: Netlab: Our Journey Together and Forward**
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**