

# Optimization and Control of Networks: From Theory to Practice

## Reunion Workshop on Prof. Steven Low's 60th Birthday

May 24-25, 2024, 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**

**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**  
H. Newman, California Institute of Technology

**10:00 am–10:25 am: Coffee break**

**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–11:55 am: Load Balancing at Google**  
B. Wydrowski ('2005), Google

**11:55 am–11:10 am: Resource Management in AI/ML Systems**  
Z. Liu ('2014), Stony Brook University

**11:10 am–10:15 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**

**1:30 pm–2:15 pm: Keynote II: Analyzing Spatially Distributed EV Charging Dynamics with Optimization and Duality**  
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**

**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 CO<sub>2</sub>**  
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)

**Saturday, May 25, 2024**

**8:00 am–8:50 am: Breakfast**

**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: Model-free Analysis of Dynamical Systems Using Recurrent Set**

E. Mallada ('2015), John Hopkins University

**10:15 am–10:30 am: Distributionally Robust Regret Optimal Control**

E. Bitar ('2012), Cornell University

**10:30 am–10:45 am: Structure Exploiting Multi-Agent Reinforcement Learning**

G. Qu ('2021), Carnegie Mellon 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**