

EnCORE Workshop on Computational vs Statistical Gaps in Learning and Optimization

Monday February 26, 2024

- 8:00–8:55 *Check-in/Breakfast (hosted by IPAM)*
- 8:55–9:00 *Welcome and Opening Remarks*
- 9:00 *SESSION CHAIR: Raghu Meka (UCLA)*
- 9:00–9:50 **Ankur Moitra** (Massachusetts Institute of Technology)
Learning from Dynamics
- 10:00–10:15 *Break*
- 10:15–11:05 **Ravi Kumar** (Google Inc.)
learning-Augmented Online Optimization
- 11:15–11:30 *Break*
- 11:30–12:20 **Jelani Nelson** (University of California, Berkeley (UC Berkeley))
New local differentially private protocols for frequency and mean estimation
- 12:30–2:30 *Lunch (on your own)*
- 2:30 *SESSION CHAIR: Arya Mazumdar*
- 2:30–3:20 **Adel Javanmard** (University of Southern California (USC))
Learning from Aggregate Responses
- 3:30–4:00 *Break*
- 4:00–4:50 **Omer Reingold** (Stanford University)
Learn Now, Optimize Later: Algorithmic Fairness, Loss Minimization and Outcome Indistinguishability
- 5:00–5:15 *Lightning Poster Session*
- 5:15–6:30 *Reception (Location: IPAM Lobby)*

Tuesday February 27, 2024

- 8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*
- 9:00–9:50 **Vasilis Kotonis** (University of Texas at Austin)
Smoothed Analysis for Learning Concepts with Low Intrinsic Dimension
- 10:00–10:15 *Break*

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- 10:15–11:05 **Pasin Manurangasi** (Google Thailand)
The Complexity of Adversarially Robust Proper Learning of Halfspaces with Agnostic Noise
- 11:15–11:30 *Break*
- 11:30–12:20 **Abhineet Agarwal** (University of California, Berkeley (UC Berkeley))
Understanding and overcoming the statistical limitations of decision trees
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Thien Le** (Massachusetts Institute of Technology)
On the hardness of learning under symmetries
- 3:30–4:00 *Break*
- 4:00–4:30 **Rachel Ward** (University of Texas at Austin)
TBA

Wednesday February 28, 2024

- 8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*
- 9:00 *SESSION CHAIR: Rachel Ward*
- 9:00–9:50 **Andrea Montanari** (Stanford University)
Solving overparametrized systems of nonlinear equations
- 10:00–10:15 *Break*
- 10:15–11:05 **Cynthia Rush** (Columbia University)
Is It Easier to Count Communities Than Find Them?
- 11:15–11:30 *Break*
- 11:30–12:20 **Matus Telgarsky** (Courant Institute of Mathematical Sciences)
A Perceptron Trio
- 12:30 *Group Photo*
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Wasim Huleihel** (Tel Aviv University)
Testing Dependency of Databases
- 3:30–4:00 *Break*
- 4:00–4:50 **Giang Tran** (University of Waterloo)
Fast Multipole Attention: A Divide-and-Conquer Attention Mechanism for Long Sequences

Thursday February 29, 2024

- 8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*
- 9:00 *SESSION CHAIR: Matus Telgarsky (Courant Institute, NYU)*
- 9:00–9:50 **Jelena Diakonikolas** (University of Wisconsin-Madison)
Robust Learning of a Single Neuron: Bridging Computational Gaps Using Insights from Optimization
- 10:00–10:15 *Break*
- 10:15–11:05 **Sitan Chen** (Harvard University)
Provably learning a multi-head attention layer
- 11:15–11:30 *Break*
- 11:30–12:20 **Vatsal Sharan** (University of Southern California (USC))
Memory as a lens to understand efficient learning and optimization
- 12:30–2:30 *Lunch (on your own)*
- 2:30 *SESSION CHAIR: Raghu Meka (UCLA)*
- 2:30–3:20 **Arya Mazumdar** (University of California, San Diego (UCSD))
Sample complexity of estimation in logistic regression
- 3:30–4:00 *Break*
- 4:00–4:50 *TBD*

Friday March 1, 2024

- 8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*
- 9:00–9:50 **Pravesh Kothari** (Princeton University)
Efficiently Finding Planted Cliques in Semirandom Graphs
- 10:00–10:15 *Break*
- 10:15–11:05 **Surbhi Goel** (University of Pennsylvania)
Beyond Worst-case Guarantees for Sequential Prediction: Robustness via Abstention
- 11:15–11:30 *Break*
- 11:30–12:20 **Raghu Meka** (University of California, Los Angeles (UCLA))
Complexity of Sparse Linear Regression

