Optimization in the Big Data Era

Fast Optimization Algorithms in the Big Data Era
(5–9 December 2022)

ORGANIZING COMMITTEE

Co-Chairs

Stephen J. Wright
University of Wisconsin, USA

Defeng Sun
The Hong Kong Polytechnic University, China

Kim Chuan Toh
National University of Singapore, Singapore

Venue

IMS Auditorium

Institute for Mathematical Sciences

3 Prince George's Park

Singapore 118402

For more information: Click here

Fast Optimization Algorithms in the Big Data Era
(5–9 December 2022)

Monday, 05 December 2022

Time	Title	Speaker
0900–0920	Registration	
0920–0930	Opening Remarks	
0930–1015	*Distinguished Visitor Lecture Series* Optimization in theory and practice	Stephen Wright University of Wisconsin–Madison, USA
1015–1045	*Group Photo & Coffee Break*	
1045–1130	*Distinguished Visitor Lecture Series* Primal-dual optimization methods for robust machine learning	Stephen Wright University of Wisconsin–Madison, USA
1130–1215	Convergence under Lipschitz smoothness of ease-controlled Random Reshuffling gradient Algorithms	Laura Palagi Sapienza University of Rome, Italy
1215–1400	*Lunch Break*	
1400–1445	Derivative-Free Optimization Methods based on Finite-Differences	Geovanni Grapiglia UC Louvain, Belgium
1445–1530	High-dimensional Inference with Stochastic Approximation Algorithms	Krishna Balasubramanian University of California at Davis, USA
1530–1600	*Coffee Break*	
1600–1645	Light speed computation of exact solutions to generic and to degenerate assignment problems	Patrice Koehl University of California, Davis, USA
1645–1730	An Efficient HPR Algorithm for the Wasserstein Barycenter Problem with $O(Dim(P)/\varepsilon$ Computational Complexity	Yancheng Yuan The Hong Kong Polytechnic University, China

Tuesday, 06 December 2022

Time	Title	Speaker
0915–0930	Registration	
0930–1015	Recent Advances in First-Order Methods for Linear Programming	Robert Freund MIT Sloan School of Management, USA
1015–1045	*Coffee Break*	

Tuesday, 06 December 2022

Time	Title	Speaker
1045–1130	ProxSkip: Local gradient steps provably lead to communication acceleration	Peter Richtarik King Abdullah University of Science and Technology, Saudi Arabia
1130–1215	A Unified Primal-Dual Algorithm Framework for Inequality Constrained Problems	Junyu Zhang National University of Singapore, Singapore
1215–1400	*Lunch Reception at IMS*	
1400–1445	Alternating minimization for generalized rank one matrix sensing: Sharp predictions from a random initialization	Kabir Chandrasekher Stanford University, USA
1445–1530	On Efficient and Scalable Computation of the Nonparametric Maximum Likelihood Estimator in Mixture Models	Yangjing Zhang Chinese Academy of Sciences, China
1530–1600	*Coffee Break*	
1600–1645	Randomized First-Order Algorithms for Min-Max Problems	Ahmet Alacaoglu University of Wisconsin–Madison, USA
1645–1730	Optimization methods for highly nonconvex data science tasks	Clément W. Royer Université Paris Dauphine-PSL, France

Wednesday, 07 December 2022

Time	Title	Speaker
0915–0930	Registration	
0930–1015	Stochastic oracles and how to define them	Katya Scheinberg Cornell University, USA
1015–1045	*Coffee Break*	
1045–1130	Complexity and performance for two classes of noisetolerant first-order algorithms	Serge Gratton ENSEEIHT and Université de Toulouse, France
1130–1215	Objective-Function-Free Optimization, Part II: Complexity of Adaptive Regularization and Numerical Experiments	Philippe Toint Université de Namur, Belgium
1215–1330	*Lunch Break*	
1330–1415	First-order methods for convex optimization and monotone inclusions under local Lipschitz conditions	Zhaosong Lu University of Minnesota, USA

Wednesday, 07 December 2022

Time	Title	Speaker
1430–1730	<u>Excursion</u> Venue: Gardens By the Bay *Voluntary* *(Prices vary based on the attraction choice.* *https://www.gardensbythebay.com.sg)*	
1800–2100	<u>Conference dinner</u> Venue: Jumbo Seafood @ Riverside Point *Voluntary*	

Thursday, 08 December 2022

Time	Title	Speaker
0915–0930	Registration	
0930–1015	Policy Optimization over General State and Action Spaces	George Lan Georgia Institute of Technology, USA
1015–1045	*Coffee Break*	
1045–1130	Semi-Anchored Multi-Step Gradient Method for Nonconvex-Nonconcave Minimax Optimization	Donghwan Kim Korea Advanced Institute of Science & Technology, Korea
1130–1215	From Robustness to Efficiency	Yin Tat Lee University of Washington, USA
1215–1400	*Lunch Break*	
1400–1445	Solution Structure Utilization for Efficient Optimization and Large-scale Machine Learning	Ching-pei Lee Academia Sinica, Taipei
1445–1530	A Mixing Time Lower Bound for a Simplified Version of Bayesian Additive Regression Trees (BART)	Yan Shuo Tan National University of Singapore, Singapore
1530–1600	*Coffee Break*	
1600–1645	Accelerating the calculation of optimally smooth pycnophylactic interpolations	Michael Gastner Yale-NUS College, Singapore
1645–1700	Closing Remarks	

Friday, 09 December 2022

Time	Title	Speaker
0930–1200	Free Discussions	

This schedule is accurate as of 05 December 2022.