Optimization in the Big Data Era
(05 Dec 2022–16 Dec 2022)

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Name & Affiliation	Talk Title
Ahmet Alacaoglu University of Wisconsin–Madison, USA	Randomized First-Order Algorithms for Min-Max Problems
Waheed Bajwa Rutgers University, USA	Learning Mixtures of Separable Dictionaries for High-Dimensional Tensor Data
Krishna Balasubramanian University of California at Davis, USA	High-dimensional Inference with Stochastic Approximation Algorithms
Kabir Chandrasekher Stanford University, USA	Alternating minimization for generalized rank one matrix sensing: Sharp predictions from a random initialization
Chao Ding Chinese Academy of Sciences, China	On the convergence analysis of augmented Lagrangian method for matrix optimization
Ethan Xingyuan Fang Duke University, USA	Implicit Regularization of Bregman Proximal Point Algorithm and Mirror Descent on Separable Data
Robert Freund MIT Sloan School of Management, USA	Recent Advances in First-Order Methods for Linear Programming
Michael Gastner Yale-NUS College, Singapore	Accelerating the calculation of optimally smooth pycnophylactic interpolations
Geovanni Grapiglia UC Louvain, Belgium	Derivative-Free Optimization Methods based on Finite-Differences
Serge Gratton ENSEEIHT and Université de Toulouse, France	Complexity and performance for two classes of noise-tolerant first-order algorithms
Niao He ETH Zurich, Switzerland	Nonconvex Min-Max Optimization: fundamental limits, acceleration, and adaptivity
Michael Hintermuller Weierstrass Institute, Germany	A descent algorithm for the optimal control of ReLU neural network informed PDEs based on approximate directional derivatives
Nhat Ho The University of Texas at Austin, USA	Instability, Computational Efficiency and Statistical Accuracy

Name & Affiliation	Talk Title
Patrice Koehl University of California, Davis, USA	Light speed computation of exact solutions to generic and to degenerate assignment problems
Donghwan Kim Korea Advanced Institute of Science & Technology, Korea	Semi-Anchored Multi-Step Gradient Method for Nonconvex-Nonconcave Minimax Optimization
George Lan Georgia Institute of Technology, USA	Policy Optimization over General State and Action Spaces
Ching-pei Lee Academia Sinica, Taipei	Solution Structure Utilization for Efficient Optimization and Large-scale Machine Learning
Yin Tat Lee University of Washington, USA	From Robustness to Efficiency
Meixia Lin Singapore University of Technology and Design, Singapore	Determinantal point processes for sampling minibatches in SGD
Zhaosong Lu University of Minnesota, USA	First-order methods for convex optimization and monotone inclusions under local Lipschitz conditions
Yurii Nesterov UCLouvain, Belgium	***Distinguished Visitor Lecture Series*** Talk 1 Set-Limited Functions and Polynomial-Time Interior-Point Methods Talk 2 New perspectives for higher-order methods in Convex Optimization
Viet Anh Nguyen The Chinese University of Hong Kong, China	Fair Principal Component Analysis under Optimal Transport Perturbations
Laura Palagi Sapienza University of Rome, Italy	Convergence under Lipschitz smoothness of ease-controlled Random Reshuffling gradient Algorithms
Jong-Shi Pang University of Southern California, USA	***Distinguished Visitor Lecture Series*** Talk 1 Nonconvex Stochastic Programs: Deterministic Constraints Talk 2 Nonconvex Stochastic Programs: Chance Constraints
Houduo Qi University of Southampton, UK	Global and Local Convergence-Rate Analysis of an Inexact Newton Augmented Lagrangian Method for Zero-One Composite Optimization

Name & Affiliation	Talk Title
Peter Richtarik King Abdullah University of Science and Technology, Saudi Arabia	ProxSkip: Local gradient steps provably lead to communication acceleration
Clément W. Royer Université Paris Dauphine-PSL, France	Optimization methods for highly nonconvex data science tasks
Shoham Sabach Technion - Israel Institute of Technology, Israel	Faster Lagrangian-based methods in convex optimization
Katya Scheinberg Cornell University, USA	Stochastic oracles and how to define them
Anthony Man-Cho So The Chinese University of Hong Kong, China	On the Complexity of Approximate Stationarity Concepts in Non-Smooth Optimization
Yong Sheng Soh National University of Singapore, Singapore	Optimal Regularizers for Data via Shape Regression
Mahdi Soltanolkotabi University of Southern California, USA	Demystifying Feature learning via gradient descent with applications to medical image reconstruction
Akiko Takeda The University of Tokyo, Japan	Generalized Levenberg–Marquardt method with oracle complexity bound and local quadratic convergence
Yan Shuo Tan National University of Singapore, Singapore	A Mixing Time Lower Bound for a Simplified Version of Bayesian Additive Regression Trees (BART)
Christos Thrampoulidis University of British Columbia, Canada	Finding Structures in Large Models: Imbalance Trouble
Philippe Toint Université de Namur, Belgium	Objective-Function-Free Optimization, Part II: Complexity of Adaptive Regularization and Numerical Experiments
Xin Tong National University of Singapore, Singapore	Sampling with constraints using variational methods
Antonios Varvitsiotis Singapore University of Technology and Design, Singapore	Data-scarce identification of learning dynamics via sum-of-squares optimization

Name & Affiliation	Talk Title
Stephen Wright University of Wisconsin–Madison, USA	***Distinguished Visitor Lecture Series*** Talk 1 Optimization in theory and practice Talk 2 Primal-dual optimization methods for robust machine learning
Shuoguang Yang Hong Kong University of Science and Technology, China	Decentralized Gossip-Based Stochastic Bilevel Optimization over Communication Networks
Yancheng Yuan The Hong Kong Polytechnic University, China	An Efficient HPR Algorithm for the Wasserstein Barycenter Problem with O(Dim(P)/ε) Computational Complexity
Man-Chung Yue The University of Hong Kong, China	Nonlinear Covariance Shrinkage Estimator via Distributionally Robust Optimization
Anru Zhang Duke University, USA	Tensor Learning in 2020s: Methodology, Theory, and Applications
Junyu Zhang National University of Singapore, Singapore	A Unified Primal-Dual Algorithm Framework for Inequality Constrained Problems
Yangjing Zhang Chinese Academy of Sciences, China	On Efficient and Scalable Computation of the Nonparametric Maximum Likelihood Estimator in Mixture Models