

2020 AFOSR Mathematical Optimization Annual Program Review

Drs. Warren Adams/Fariba Fahroo | August 19-21, 2020 | Virtual

Agenda Day 1 - Wednesday, August 19, 2020

Time	Title of Project	Speaker
9:30 – 9:45	Zoom Login	
9:45 – 10:00	Introductory Remarks, Portfolio Status	Warren Adams AFOSR
10:00 – 10:30	Simulation Optimization: New Approaches to Gradient-Based Search and Maximum Likelihood Estimation	Michael Fu University of Maryland
10:30 – 11:00	Designing Resilient Networked Swarms: A New Evolutionary Dynamic Approach that Introduces Dynamics and Variability to Population Game	Nuno Martins University of Maryland
11:00 – 11:30	(YIP) Taming Nonconvexity in Solving High-Dimensional Nonlinear Systems of Equations	Yuxin Chen Princeton University
11:30 – 11:45	BREAK	
11:45 – 12:15	(YIP) Data Acquisition in Dynamic Environments: A Submodular Perspective	Hamed Hassani University of Pennsylvania
12:15 – 12:45	(YIP) Graphs at Your Fingertips – Managing and Summarizing Big Graphs	Peixiang Zhao Florida State University
12:45 – 13:15	Efficient Constraint Solving Engines to Reason about Real-Time Systems	Krishnamurthy Subramani West Virginia University
13:15 – 14:15	Lunch	
14:15 – 14:45	Structured Assignment: Geometric Optimization Algorithms for Large-Scale Matching	Justin Solomon MIT
14:45 – 15:15	Optimizing Systems with Conflicting Objectives Competing for a Limited Resource	Hans Mittelmann Arizona State University
15:15 – 15:45	Optimization Based Approaches to Network Analytics	Pavlo Krokhmal University of Arizona
15:45 – 16:00	Break	
16:00 – 16:30	(YIP) Learning Data Representations via Nonconvex Optimization	Mahdi Soltanolkotabai University of Southern California
16:30 – 17:00	Predictive Stochastic Programming: A New Class of Models and Algorithms	Suvrajeet Sen University of Southern California
17:00 –	Closing Remarks, Discussions, Adjourn for the Day	Warren Adams AFOSR

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Agenda Day 2 - Thursday, August 20, 2020

Time	Title of Project	Speaker
9:30 – 9:45	Zoom Login	
9:45 – 10:00	Introductory Remarks, Portfolio Status	Warren Adams AFOSR
10:00 – 10:30	Persistency in 0-1 Optimization	Julie Lassiter Clemson University
10:30 – 11:00	Decentralized Bayesian Multi-Agent Multi-Target Search, Localization and Tracking	Peter Frazier Cornell University
11:00 – 11:30	Sparse, Low-rank, and Overcomplete Tensor Decompositions	Ashley Prater-Bennette (AFRL/RI)
11:30 – 11:45	BREAK	
11:45 – 12:15	Scalable Accelerated Algorithms for Exascale Simulation and Optimization/Deep Learning	Robert Freund & Jaime Peraire MIT
12:15 – 12:45	Verifiable Interactive Planning	Alvero Velasquez (AFRL/RI)
12:45 – 13:15	Real-Time Distributed Optimization in Networked Multi-Agent Systems	Christos Cassandras Boston University
13:15 – 14:15	Lunch	
14:15 – 14:45	Distributional Stability and Error Estimates in Constrained Learning, Optimization under Uncertainty, and Defense Applications	Johannes Royset NPS
14:45 – 15:15	Nonconvex Optimization for Statistical Estimation	Jong-Shi Pang University of Southern California
15:15 – 15:45	Analysis of Nonlinear Decision-Making and Optimization Problems: Theory of Global Optimally and Linear-Time Algorithms	Soyameh Sojoudi UC Berkeley
15:45 – 16:00	Break	
16:00 – 16:30	Development of an Optimal Control Theory for Nonlinear and Accelerated Optimization	Michael Ross NPS
16:30 – 17:00	Structure Exploiting Trust Regions for Bilevel and Risk-Averse Optimization	Harbir Antil & Drew Kouri GMU & AFRL/AFOSR
17:00 –	Closing Remarks, Discussions, Adjourn for the Day	Warren Adams AFOSR

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Agenda Day 3 - Friday, August 21, 2020

Time	Title of Project	Speaker
9:30 – 9:45	Zoom Login	
9:45 – 10:00	Introductory Remarks, Portfolio Status	Col Jason Mello AFOSR/RT Chief Warren Adams AFOSR
10:00 – 10:30	Integrating Quantum and Traditional Computing in Optimization	James Ostrowski University of Tennessee
10:30 – 11:00	Quantitative Bounds for Cutting Plane and Enumeration Techniques in Mixed-Integer Optimization	Amitabh Basu Johns Hopkins University
11:00 – 11:30	Online Modeling of Heterogeneous Autonomy	Alfredo Garcia Texas A&M University
11:30 – 11:45	BREAK	
11:45 – 12:15	Massively Parallel Approaches for Buffered Probability Optimization and Applications	Stanislav Uryasev University of Florida
12:15 – 12:45	Improving Exact Algorithms for Finding Optimal Experimental Designs & Test Suite	Dursun Bulutoglu AFIT
12:45 – 13:15	Optimal Real-time Decision-Making in an Uncertain World	Sheldon Jacobson University of Illinois
13:15 – 14:15	Lunch	
14:15 – 14:45	New Directions in Mean Field Games – MFG Subpopulation Behaviours and Graphon-MFG Systems	Peter Caines Royal Inst for Adv of Learning
14:45 – 15:15	Stochastic Optimization and Learning for Planning in Autonomous Systems	Warren Powell & Mengdi Wang Princeton University
15:15 – 15:45	Design of Networks in Uncertain Environments with Buffered Probability of Exceedance (bPOE) and Cardinality of Upper Average (CUA) Characteristics	Jeremy Jordan AFIT
15:45 –	Closing Remarks, Discussions, Meeting Adjourns	Warren Adams AFOSR