

Discrete Mathematics and Optimization Program Review 2015

Dr. JeanLuc Cambier | December 14-16, 2015 | Arlington, VA

Basic Research and Innovation Collaboration Center (BRICC)
4075 Wilson Blvd., Suite 350 | Liberty Room
Arlington, VA 22203

Agenda Day 1 – December 14, 2015
08:00 – 16:00

| | TIME | TOPIC | SPEAKER |
|-------------|---------------|---|--|
| | 07:30 – 07:55 | Registration | |
| Session I | 07:55 – 08:00 | Opening Remarks | Jean-Luc Cambier Program Officer AFOSR/RTA2 |
| | 08:00 – 08:25 | Using Surrogates for Solving Black-box Optimization Problems | Charles Audet Polytechnique Montreal |
| | 08:25 – 08:50 | Modulation Design in Wireless HARQ Transmissions | Hans Mittelmann Arizona State University |
| | 08:50 – 09:15 | Risk Management Approaches in Engineering Applications | Stan Uryasev University of Florida |
| | 09:15 – 09:40 | Coherent Risk-Adjusted Optimization | Jonathan Eckstein Rutgers |
| | 09:40 – 09:55 | BREAK | |
| Session II | 09:55 – 10:20 | Optimal Dynamic Asset Allocation with Risk-sensitive Performance Measures | Sheldon H. Jacobson University of Illinois, Champaign-Urbana |
| | 10:20 – 10:45 | Simulation-Based and Risk-Sensitive Methodologies | Steve Marcus University of Maryland, College Park |
| | 10:45 – 11:10 | Large-Scale Optimization | Gerald G. Brown Naval Postgraduate School |
| | 11:10 – 11:35 | Monotone Sets of Solutions for Attacker-defender and Defender-attacker-defender Problems | Matt Carlyle Naval Postgraduate School |
| | 11:35 – 12:50 | LUNCH | |
| Session III | 12:50 – 13:15 | Bayesian Optimization of Expensive Functions with Applications in Bionanocombinatorics and Aerospace Design | Peter Frazier Cornell University |
| | 13:15 – 13:40 | Pseudo-Boolean Optimization: New Search Methods and New Applications | Darrell Whitley Adele Howe Colorado State University |
| | 13:40 – 14:05 | New Approaches for Very Large-Scale Integer Programming | George Nemhauser Georgia Tech Research Corporation |
| | 14:05 – 14:30 | Optimal Learning in Materials: From Nonlinear Parametric to High-Dimensional Sparse-Additive Models | Warren B. Powell Princeton University |

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| | 14:30 – 14:45 | BREAK | |
| Session IV | 14:45 – 15:10 | A Sampling Framework for Solving Network Interdiction Problems with Fortification | J. Cole Smith Clemson University |
| | 15:10 – 15:35 | Identifying Resilient Structures in Stochastic Networks: A Two-Stage Stochastic Optimization Approach | Pavlo Krokhmal University of Iowa Eduardo Pasillao AFRL/RW Maciej Rysz NRC, AFRL/RW |
| | 15:35 – 16:00 | Clique Relaxations in Complex Networks: Foundations and Algorithms | Sergiy Butenko Texas A&M University B. Balasundaram OK State University Vlad Boginski University of Central Florida |
| | 16:00 – 16:25 | Finding the Symmetry Group of a Linear Program | Dursun Bulutoglu Air Force Institute of Technology |
| | 16:25 | Meeting Adjourned for the Day | |

Agenda Day 2 – Tuesday, December 15, 2015
08:00 – 16:00

| | TIME | TOPIC | SPEAKER |
|-------------------|---------------|--|--|
| | 07:30 – 08:00 | Registration | |
| Session V | 08:00 – 08:25 | Gradient-based Adaptive Stochastic Search | Enlu Zhou Georgia Institute of Technology |
| | 08:25 – 08:50 | Optimization under Stochastic Ambiguity – A Lopsided Perspective | Johannes O. Royset Naval Postgraduate School |
| | 08:50 – 09:15 | Real-Time Optimization in Complex Stochastic Environments | Christos G. Cassandras Boston University |
| | 09:15 – 09:40 | A Convergent Decentralized Algorithms for Certain Nash Equilibrium and Stochastic Programming Problems | Andrew Liu Purdue University |
| | 09:40 – 09:55 | BREAK | |
| Session VI | 09:55 – 10:20 | Robust Design – Applications to Photonics | J. Peraire N. C. Nguyen Robert Freund MIT |
| | 10:20 – 10:45 | Mixed-Integer Nonconvex Quadratic Optimization Relaxations, Performance Analysis | Yinyu Ye Stanford University |
| | 10:45 – 11:10 | Unconstrained Trust Region-Based Stochastic Optimization with Biased and Unbiased Noise | Katya Scheinberg Lehigh University |
| | 11:10 – 11:35 | Enabling Large-Scale Structural Design via Mixed Integer Conic Optimization | Tamás Terlaky Lehigh University Luis Zuluaga Lehigh University Joaquim Martins University of Michigan |

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| | 11:35 – 12:50 | LUNCH | |
| Session VII | 12:50 – 13:15 | Statistical Optimality, Algorithms and Resilience | Suvrajeet Sen University of Southern California, Los Angeles |
| | 13:15 – 13:40 | Efficient and Robust Recovery of Structure in Large Data Sets Using Convex Optimization | Steve Vavasis Henry Wolkowicz University of Waterloo |
| | 13:40 – 14:05 | Level-Set Methods in Convex Optimization | Dmitriy Drusvyatskiy University of Washington |
| | 14:05 – 14:30 | Combinatorial Optimization problems in Computer Security | K. Subramani West Virginia University |
| | 14:30 – 14:45 | BREAK | |
| Session VIII | 14:45 – 15:10 | Expanding the Reach of Nonlinear Optimization | Steve Robinson Michael Ferris University of Wisconsin, Madison |
| | 15:10 – 15:35 | Incentives for Efficient Black-box Resource Allocation | Alfredo Garcia University of Florida |
| | 15:35 – 16:00 | Further Developments in the Global Resolution of Convex Programs | Jong-Shi Pang University of Southern California, Los Angeles |
| | 16:00 | Meeting Adjourned | |