Structure and Randomness in System Identification and Learning

Tuesday January 15, 2013

8:00–9:00 *Check-In/Light Breakfast (Hosted by IPAM)*

9:00–9:50 **Pablo Parrilo** (Massachusetts Institute of Technology)
Convex Sets, Conic Matrix Factorizations and Conic Rank Lower Bounds

10:00–10:15 *Break*

10:15–11:05 **Tong Zhang** (Rutgers University-Camden)
Proximal Stochastic Dual Coordinate Ascent

11:15–11:30 *Break*

11:30–12:20 **Constantine Caramanis** (University of Texas at Austin)
Crowd-Sourcing Epidemic Detection

12:30–2:30 *Lunch (on your own)*

2:30–3:20 **Munther Dahleh** (Massachusetts Institute of Technology)
Rare Probability Estimation

3:30–4:00 *Break*

4:00–4:50 **John Doyle** (California Institute of Technology)
What is the probability that Munzer will see something that does not exist? A Bayesian Perspective

5:00–6:30 *Reception and Poster Session (Hosted by IPAM)*

Wednesday January 16, 2013

8:00–9:00 *Continental Breakfast*

9:00–9:50 **Lennart Ljung** (Linköping University)
Using Multiple Kernel-based Regularization for Linear System Identification

10:00–10:15 *Break*

10:15–11:05 **Mario Sznaier** (Northeastern University)
Moments Based Relaxations in Systems Identification and Machine Learning

11:15–11:30 *Break*

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11:30–12:20 **Venkat Chandrasekaran** (California Institute of Technology)
Computational and Statistical Tradeoffs via Convex Relaxation

12:30–2:30 *Lunch (on your own)*

2:30–3:20 **Stephen Wright** (University of Wisconsin-Madison)
Convergence of a Randomized Sampling Method for Identifying a Subspace of R^n.

3:30–4:00 *Break*

4:00–4:50 **Lin Xiao** (Microsoft Research)
Proximal-Gradient Homotopy Methods for Sparse Optimization

Thursday January 17, 2013

8:00–9:00 *Continental Breakfast*

9:00–9:50 **Emmanuel Candes** (Stanford University)
Towards a Mathematical Theory of Super-Resolution

10:00–10:15 *Break*

10:15–11:05 **Andrea Montanari** (Stanford University)
Hypothesis Testing in High-Dimensional Regression under the Gaussian Random Design Model

11:15–11:30 *Break*

11:30–12:20 **Alekh Agarwal** (Microsoft Research)
Stochastic Optimization and Sparse Statistical Recovery: An Optimal Algorithm in High Dimensions

12:30–2:00 *Lunch (on your own)*

2:00–2:50 **Michael Mahoney** (Stanford University)
Structure and Randomness in Large Informatics Graphs

3:00–3:15 *Break*

3:15–4:05 **Nathan Srebro** (University of Chicago)
Tightness of Convex Relaxations to Sparsity and Rank

4:15–4:30 *Break*

4:30–5:20 **Inderjit Dhillon** (University of Texas at Austin)
Sparse Inverse Covariance Matrix Estimation Using Quadratic Approximation

Friday January 18, 2013

8:00–9:00	*Continental Breakfast*
9:00–9:50	**Joel Tropp** (California Institute of Technology) *Sharp Recovery Bounds for Convex Demixing with Applications*
10:00–10:15	*Break*
10:15–11:05	**Sahand Negahban** (Massachusetts Institute of Technology) *Noisy Matrix Decomposition via Convex Relaxation*
11:15–11:30	*Break*
11:30–12:20	**Babak Hassibi** (California Institute of Technology) *Phase Recovery for Sparse Signals*
12:30–2:30	*Lunch (on your own)*
2:30–3:20	**Deanna Needell** (Claremont McKenna College) *Synthesis and Analysis Type Methods for Signal Reconstruction from Random Observations*
3:30–4:00	*Break*
4:00–4:50	**Maryam Fazel** (University of Washington) *Simultaneously Structured Models with Application to Sparse and Low-rank Matrices*