Stochastic Gradient Methods

Monday February 24, 2014

8:00–8:50 *Check-In/Light Breakfast (Hosted by IPAM)*

8:50–9:00 *Welcome and Opening Remarks*

9:00–9:45 **Nathan Srebro** (TTI-Chicago)
Distributed Stochastic Optimization: The Role of SGD

10:00–10:15 *Break*

10:15–11:00 **Ben Recht** (University of California, Berkeley (UC Berkeley))
Why we should all run Hogwild!

11:15–11:30 *Break*

11:30–12:15 **Yoram Singer** (Google Inc.)
Adaptive Gradient (AdaGrad) and Generalized Accelerated Gradient Ascent (GAGA): two sides of the same coin?

12:30–2:30 *Lunch (on your own)*

2:30–3:15 **John Langford** (Microsoft Research)
Learning to Interact

3:30–4:00 *Break*

4:00–4:45 **Alekh Agarwal** (Microsoft Research)
Learning Sparsely Used Overcomplete Dictionaries

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

Tuesday February 25, 2014

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

9:00–9:45 **Dimitri Bertsekas** (Massachusetts Institute of Technology)
Incremental Gradient, Subgradient, and Proximal Methods for Convex Optimization: A Unified Framework

10:00–10:15 *Break*

10:15–11:00 **Peter Richtarik** (University of Edinburgh)
Accelerated, Parallel and Proximal Coordinate Descent

11:15–11:30 *Break*

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11:30–12:15 **Rachel Ward** (University of Texas at Austin)
Stochastic Gradient Descent with Importance Sampling

12:30–2:30 *Lunch (on your own)*

2:30–3:15 **Deanna Needell** (Claremont McKenna College)
SGD and its connections to the Kaczmarz method

3:30–4:00 *Break*

4:00–4:45 **Stephen Wright** (University of Wisconsin-Madison)
Asynchronous parallel stochastic Kaczmarz and stochastic coordinate descent algorithms

Wednesday February 26, 2014

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

9:00–9:45 **Yann LeCun** (New York University)
Open problems in large-scale stochastic optimization for deep learning

10:00–10:15 *Break*

10:15–11:00 **Francis Bach** (Institut National de Recherche en Informatique Automatique (INRIA))
Efficient and robust stochastic approximation through an online Newton method

11:15–11:30 *Break*

11:30–12:15 **Jorge Nocedal** (Northwestern University)
A Stochastic Quasi-Newton Method for Large Scale Learning

12:30–2:30 *Lunch (on your own)*

2:30–3:15 **John Duchi** (University of California, Berkeley (UC Berkeley))
Optimal rates for zero-order optimization: the power of two function evaluations

3:30–4:00 *Break*

4:00–4:45 **Asuman Ozdaglar** (Massachusetts Institute of Technology)
Distributed Alternating Direction Method of Multipliers for Multi-agent Optimization

Thursday February 27, 2014

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

9:00–9:45 **Mark Schmidt** (Simon Fraser University)
Minimizing Finite Sums with the Stochastic Average Gradient

10:00–10:15 *Break*

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10:15–11:00 **Lin Xiao** (Microsoft Research)
Proximal Stochastic Gradient Method with Variance Reduction

11:15–11:30 *Break*

11:30–12:15 **David Blei** (Princeton University)
Stochastic Variational Inference and Scalable Topic Models

12:30–2:30 *Lunch (on your own)*

2:30–3:15 **David McAllester** (TTI-Chicago)
A PAC-Bayesian Analysis of Dropouts

3:30–4:00 *Break*

4:00–4:45 **Jason Weston** (Facebook)
Embedding and ranking for images, entities, items and text

Friday February 28, 2014

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

9:00–9:45 **Steve Smale** (City University of Hong Kong)
The protein folding problem: introduction and new results, exposition for mathematicians.

10:00–10:15 *Break*

10:15–11:00 **Noboru Murata** (Waseda University)
Semi-optimal on-line learning for restricted gradients

11:15–11:30 *Break*

11:30–12:15 **James Spall** (Johns Hopkins University)
Recent Advances in SPSA at the two Extremes: Adaptive Methods for Smooth Problems and Discrete Methods for Non-Smooth Problems

12:30 *Conclusion*