

Submittee: Richard Lockhart
Date Submitted: 2015-05-27 12:37
Title: Statistical Inference for Large Scale Data
Event Type: Conference-Workshop

Location:
Simon Fraser University

Dates:
April 20 to April 24, 2015

Topic:
The workshop considered the role of statistical inference in the analysis of large scale data. We covered inference after model selection, inference in sparse modelling contexts, inference in graphical models, tuning parameter selection, stability of analyses, and focused on the trade-offs between computational and statistical efficiency.

Methodology:
Lectures.

Objectives Achieved:
We wanted both to introduce the local audience to the strong role for statistical theory in the analysis of large, complex data and to bring together experts on a variety of approaches to inference for big data to work towards delineating what has been achieved and what has not. The conversation was penetrating and wide-ranging but it is too early to spot any concrete advances.

Scientific Highlights:
It is too early for this.

Organizers:
Lockhart, Richard, Statistics and Actuarial Science, SFU //
Meinshausen, Nicolai, Seminar for Statistics, ETH (Zurich)

Speakers:
Jacob Bien, Biological Statistics and Computational Biology; Statistical Science; Cornell University,
Convex Banding of the Covariance Matrix //

Andreas Buja, Statistics, The Wharton School, University of Pennsylvania, Two talks: Moderate-p

Post-Selection Inference and Large-p Visualization //

Venkat Chandrasekaran, Computing and Mathematical Sciences; Electrical Engineering, California Institute of Technology, Latent-Variable Graphical Model Selection via Convex Optimization //

Johannes Lederer, Statistical Science, Cornell University, How to calibrate tuning parameters //

Jason Lee, Statistics, Stanford University, Selective Inference via the Condition on Selection Framework and Communication-efficient Sparse Regression //

Hannes Leeb, Statistics and Operations Research, University of Vienna, On conditional moments of high-dimensional random vectors given lower-dimensional projections //

Po-Ling Loh, Statistics, Wharton School, U Penn, High-dimensional robust M-estimation //

Richard Samworth, Statistical Laboratory, Pure Mathematics and Mathematical Statistics, University of Cambridge, Statistical and computational trade-offs in estimation of sparse principal components //

Noah Simon, Biostatistics, University of Washington, Adjusting Point Estimates and Confidence Intervals for Selection Bias in High Dimensions as a Frequentist //

Jonathan Taylor, Statistics, Stanford University, Selective inference in regression //

Rob Tibshirani, Statistics, Stanford University, Two novel applications of selective inference //

Bin Yu, Statistics, University of California at Berkeley, Stability //

Ming Yuan, Statistics, University of Wisconsin, Distance Shrinkage and Euclidean Embedding via Regularized Kernel Estimation //

Tong Zhang, Statistics and Biostatistics, Rutgers University and Baidu, Some Recent Progress on Non-Convex Regularization Methods for Sparse Estimation //

Abstracts are attached in a pdf.

Links:

<http://people.stat.sfu.ca/~lockhart/richard/SILSD/>

File Uploads:

Additional Upload 1: http://www.pims.math.ca/files/final_report/Abstracts_5.pdf
