



Optimization Program WISO Workshop February 8-10, 2017

Lecture: *On Statistical Inferences via Convex Optimization*

Speaker: Arkadi Nemirovski

Abstract:

The talk presents applications of Convex Optimization Theory (saddle points, duality,...) to designing provably near-optimal "computation-friendly" statistical inferences, computational friendliness meaning that the inferences and their risks are yielded by efficient computation. Examples include: (1) pairwise and multiple hypothesis testing in Gaussian, Poisson, and Discrete observation schemes, provided the hypotheses are specified by convex constraints on the parameters of observed distributions, (2) recovery of linear and linear-fractional functions of a "signal" known to belong to finite union of given convex sets, via indirect observations of the signal, (3) recovery, in Euclidean norm, of linear image of a signal known to belong to a given convex set via indirect observations of the signal in Gaussian noise.

The talk is based on joint research with A. Iouditski, University Grenoble-Alpes, and A. Goldenshluger, Haifa University.