

Inference in High-dimensional Setting with Constraints

Mladen Kolar

The University of Chicago Booth School of Business, U.S.A.

Abstract

In the second talk, we continue with the topic of statistical inference in the high-dimensional setting. We focus on problems where there are natural constraints on model parameters. First, we focus on testing whether the parameters are on the boundary of the constraint or not. We develop a statistical test that is valid in a high-dimensional setting with constrained parameter space. Numerical experiments demonstrate that our test has greater power than the standard tests that ignore the constraints. Next, we discuss statistical tests for parameters that lie on a low dimensional manifold. We show that by considering the low dimensional constraints, we obtain estimators that are semi-parametrically efficient. We will provide thorough numerical examples.