



THE WEIZMANN INSTITUTE OF SCIENCE
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Machine Learning and Statistics Seminar

Room 261 ,Ziskind Building
on Monday, Jun 15, 2015
at 14:30

PLEASE NOTE UNUSUAL DAY/TIME/PLACE

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Nonparametric estimation of service time distribution in the $M/G/\infty$ queue
and related estimation problems

Abstract:

The subject of this talk is the problem of estimating service time distribution of the $M/G/\infty$ queue from incomplete data on the queue. The goal is to estimate G from observations of the queue-length process at the points of the regular grid on a fixed time interval. We propose an estimator and analyze its accuracy over a family of target service time distributions. The original $M/G/\infty$ problem is closely related to the problem of estimating derivatives of the covariance function of a stationary Gaussian process. We consider the latter problem and derive lower bounds on the minimax risk. The obtained results strongly suggest that the proposed estimator of the service time distribution is rate optimal.