



THE WEIZMANN INSTITUTE OF SCIENCE
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Machine Learning and Statistics Seminar

Room 1 ,Ziskind Building
on Wednesday, Jan 04, 2017
at 11:15

Sivan Sabato
Ben-Gurion University of the Negev

Active Nearest-Neighbor Learning in Metric Spaces

Abstract:

We propose a pool-based non-parametric active learning algorithm for general metric spaces, which outputs a nearest-neighbor classifier. We give prediction error guarantees that depend on the noisy-margin properties of the input sample, and are competitive with those obtained by previously proposed passive learners. We prove that the label complexity of the new algorithm is significantly lower than that of any passive learner with similar error guarantees. Our algorithm is based on a generalized sample compression scheme and a new label-efficient active model-selection procedure. Based on joint work with Aryeh Kontorovich and Ruth Uner.