מכון ויצמן למדע

THE WEIZMANN INSTITUTE OF SCIENCE

FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Machine Learning and Statistics Seminar

Room 1 ,Ziskind Building
on Wednesday, Nov 20, 2019
at 11:15

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Optimization's Hidden Gift to Learning: Implicit Regularization

Abstract:

It is becoming increasingly clear that implicit regularization afforded by the optimization algorithms play a central role in machine
learning, and especially so when using large, deep, neural networks. We have a good understanding of the implicit regularization afforded by stochastic approximation algorithms, such as SGD, for convex problem, and we understand and can characterize the implicit bias of different algorithms, and can design algorithms with specific biases. But in this talk I will focus on implicit biases of local search algorithms for non-convex underdetermined problem, such as deep networks. In an effort to uncover the implicit biases of gradient-based optimization of neural networks, which holds the key to their empirical success, I will discuss recent
work on implicit regularization for matrix factorization, linear convolutional networks, and two-layer ReLU networks, as well as a general bottom-up understanding on implicit regularization in terms of optimization geometry.