TTIC 31230, Fundamentals of Deep Learning

David McAllester, Autumn 2020

Double Descent

Double Descent

Reconciling modern machine learning practice and the bias-variance tradeoff

Mikhail Belkin, Daniel Hsu, Siyuan Ma, Soumik Mandal, arXiv December 2018.

Deep Double Descent: Where Bigger Models and More Data Hurt

Preetum Nakkiran, Gal Kaplun, Yamini Bansal, Tristan Yang, Boaz Barak, Ilya Sutskever, ICLR 2020

Classical Regime: Bias-Variance Tradeoff O.5 O.4 UB Descent Modern Regime: Larger Model is Better Critical Regime Test Train Interpolation Threshold

Deep Double Descent: Where Bigger Models and More Data Hurt

30

ResNet18 width parameter

40

50

60

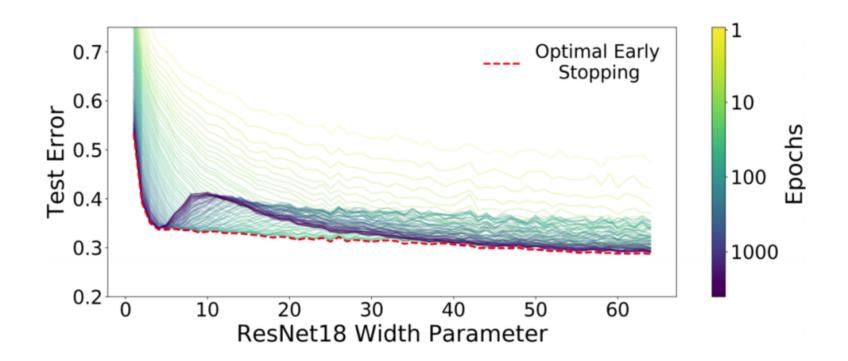
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Double Descent



\mathbf{END}