



THE UNIVERSITY OF CHICAGO

COMPUTATIONAL AND APPLIED MATHEMATICS STUDENT SEMINAR

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Deep Neural Network as Gaussian Processes

TUESDAY, February 4, 2020, at 2:00 PM
Jones 303, 5747 S. Ellis Avenue

ABSTRACT

Gaussian processes are powerful tools in machine learning and statistics. In this talk, we will review the basics of Gaussian processes, common kernels used, and how to do regression with them. We will then look at an exact correspondence between a single-layer fully-connected neural network in the infinite width limit and a Gaussian process, and extend that correspondence to deep networks with arbitrary layer number. Finally, we will present results illuminating the difference between the radial basis function kernel and the neural network kernel on a simple dataset.

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