

A Brief Introduction to Deep Neural Network for Applied Mathematicians

Wei-Fan Hu

Abstract

In this talk, I will introduce very brief and fundamental ideas that underlie deep neural network from an applied mathematics perspective. At the heart of neural network, the concepts are from calculus, approximation theory, linear algebra, and numerical methods. In particular, I will go through the followings in detail: What is an artificial neural network and how is the network trained for solving partial differential equations?