

Machine learning for PDE's

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Abstract

I will discuss several ways in which machine learning can be used for solving and understanding the solutions of nonlinear partial differential equations. Most of the talk will focus on learning discretizations for coarse graining the numerical solutions of PDEs. I will start with examples in 1d (see this paper), and then move on to advection/diffusion in a turbulent flow and will touch on results for the Navier Stokes equation.