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Seminar

Deep Learning for Missing Physics in Dynamical Systems

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Abstract: Incorporating a priori physics knowledge into machine learning leads to more robust and interpretable algorithms. In this talk, I will describe an approach combining deep learning and classic numerical methods for differential equations to solve two challenging problems in dynamical systems theory: dynamics discovery and parameter estimation, where the missing information prevents standard use of a numerical method or neural network independently for the problem. Assuming corrupt system observations, we observe promising results in predicting the system dynamics and estimating physical parameters, given appropriate choices of spatial and temporal discretization schemes and numerical method orders.

https://emory.zoom.us/j/94678278895?pwd=bDFxK2RaOTZRMjA5bzQ4UUtxNWJsZz09

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Mathematics and Science Center: MSC N306

Please email Terry for the passcode

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