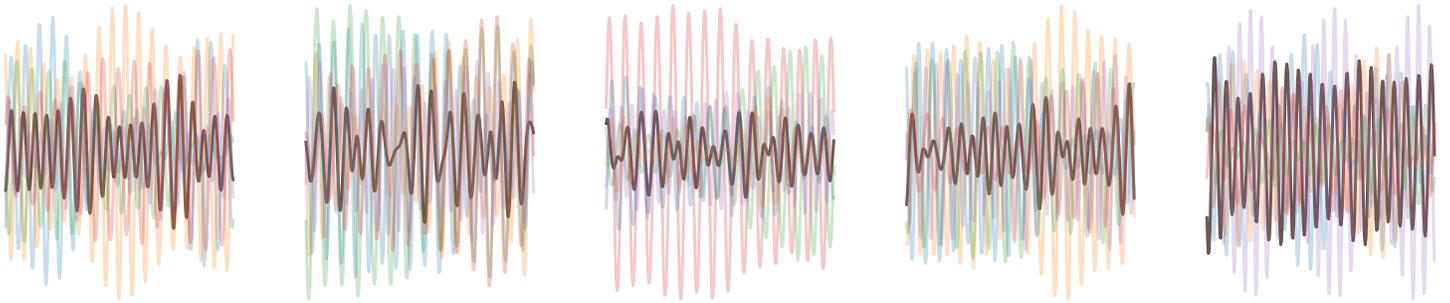


PHYSICS 494/594

Special Topics in Physics: Introduction to Machine Learning



Spring 2021

Tuesdays & Thursdays

1:10 PM – 2:25 PM

Synchronous Online

Adrian Del Maestro

Adrian.DelMaestro@utk.edu

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Prerequisites/Instructions:

MATH 142 or permission of instructor.

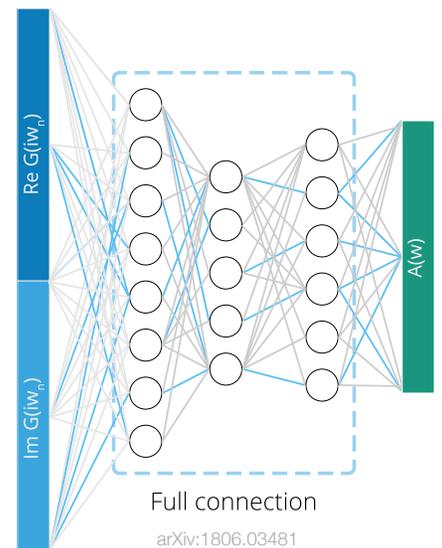
Experience with python recommended.

Grad students should take 594.

Some images generated from code by Florian Marquardt in Machine Learning for Physicists licensed under CC BY-SA 4.0 <https://creativecommons.org/licenses/by-sa/4.0>

An introduction to the fundamental concepts and applied tools of machine learning targeted to scientists.

In this class, we will focus on deep neural networks that can be trained to perform a wide variety of tasks including image recognition, pattern identification, and natural language processing, and discuss how these basic techniques can be applied to problems in physics, ranging from the prediction of material properties, the analysis of high-dimensional data sets, and to the discovery of phase transitions.



PHYSICS &
ASTRONOMY