Deep Learning Software

Klas Leino

CMU

Spring 2019

Today

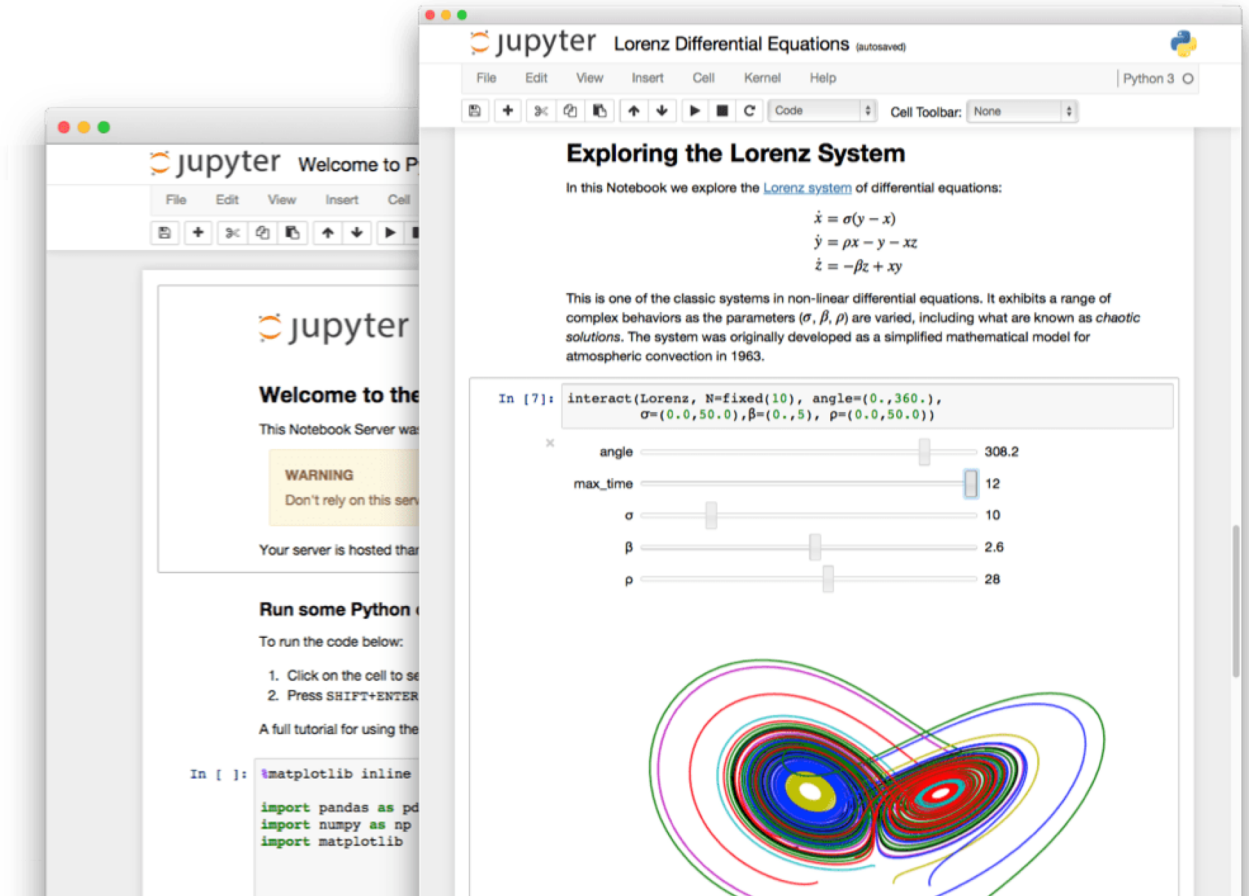
- Homework 1 is out; due February 5
- Setup with Anaconda and Jupyter Notebook
- Deep learning software
  - Numpy
  - TensorFlow
  - Keras

Anaconda

- A package management system for Python
- Allows you to create virtual environments, each with its own set of packages

Jupyter Notebook

- A web application where you can code interactively, keep track of output, plot figures, and write markdown and LaTeX
- Allows for remote interaction when you are working on the cloud
- You will be using it for HW1



Demo - Setup

Deep Learning Software

Why Do We Use Deep Learning Software?

- No need to reinvent the wheel
  - A lot of work has gone into making DL software highly optimized

Today

- NumPy
  - Not only for deep learning
  - General purpose Python library for efficiently working with vectors, matrices, tensors
- TensorFlow
  - Deep learning library
- Keras
  - High-level deep learning framework for building and training neural networks
  - Built on top of other libraries, e.g., TensorFlow

Demo - NumPy

Demo - TensorFlow

Demo - Keras