

# AI504: Programming for Artificial Intelligence

## Week 1: Numpy

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# Numpy

- Matlab for Python
  - Very similar syntax
- Easily manipulate n-dimensional arrays
  - Vectors, matrices, tensors
  - Integers, floats, bools

# Numpy

- Foundation of modern deep learning.
- Neural networks are just a bunch of matrix multiplications.
- Integrates into Scipy, Scikit-Learn, TensorFlow, PyTorch
  - Tensors in TensorFlow/PyTorch are similar to Numpy N-dim array
- Always refer to the API documentation.
  - <https://numpy.org/doc/stable/>

# Google Colab

- Online Python Notebook
- You can train your models with Google's GPU/TPU
- Session-based
  - If you close your tab, you lose your data.
  - But you can save your data in your Google Drive
- <https://colab.research.google.com>

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