

## Homework

- Reading
  - Raschka Chapter 15 (CNNs)
- Coding
  - Build a TF Keras CNN model to classify the same MNIST dataset as the last homework.
  - Make sure you continue to use best practices
    - test/validation/train splits
    - report precision / recall metrics (and accuracy if you want...)
    - an explanation of why you chose the architecture and hyperparameters you used
  - Compare the performance of your CNN against the Neural Net homework performance.
    - Compare and contrast the metrics (ensure they are measuring the same thing - if you need to, go back and add appropriate metrics to prior homework)
    - Create a [confusion matrix](#) using the test data. What are your observations of the results? Are certain digits commonly confused for other digits by your network?
    - Show per-class metrics, i.e. for each digit, how well does the model perform?
    - (You will be asked to do this again next week with Decision Trees)
  - Liberally document your Colab notebook to demonstrate your understanding of the code and the choices you made.
  - Extra credit: visualize some kernels and show what convolving an input using them looks like.