Getting Started, Creating Handwritten Digits

Complete the activity and submit a PDF of the results to Canvas.

1. Introduce yourself to your other group members.

a) Who/where is the group member who is physically furthest from Engineering Hall on UW's campus?

b) Who/where is the group member that is physically closest to Engineering Hall?

2. Set up your numerical computing environment.

Jupyter Notebooks are an open-source web application that allows you to execute scripts and view results and plots in a browser. We will rely on both Python and Jupyter notebooks extensively in this course.

There are several options for getting up and running:

- Install Python and Jupyter on your laptop. This is the preferable approach, but takes more effort.
- Use the Computer Aided Engineering (CAE) Jupyter setup (the link can be found on the course website).
- Use a cloud/web environment such as Google Colabs.

If your environment is setup, help your other group members.

3. Download and run the included notebook.

a) What digit is represented by the matrix in the first cell?

b) Re-run the last *cell* a few times, and observe the resulting image. Does it represent a handwritten digit?

c) How would you write a program that generates images that *do* represent random handwritten digits? Note that there is not a single answer, and we will spend a lot of the course thinking about this question.