# A Brief Intro to Scientific Computing–Mini-Projects

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**Project 1** *Integer Chains: An integer chain is defined as a sequence of integers* $(x_i)_{i=1}^k$ *such that for any two consecutive integers, one is a factor of the other. Given* $N \in \mathbb{Z}$*, we are interested in finding the length of the longest integer chain in* $S = \{k \in \mathbb{Z} | 1 \leq k \leq N\}$*. Write code to answer this question for general* $N$ *and answer it for* $N = 25$*. In addition, you can attempt to write your code to run quicker (mine takes 176 seconds using a parfor loop and 450 seconds using a regular for loop) and to use fewer lines (mine uses 29 lines of code).*

**Project 2** *Neural Networks: (Note: This is taken directly from the UCI Data Science Initiative (DSI) github: https://github.com/UCIDataScienceInitiative/LearningWithPython) Use Python's tensorflow and/or keras packages to build and train neural nets. You can use them to discriminate Higgs bosons, classify pictures of animals, classify handwritten numbers, or anything else you desire.*