Raunak Sood

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[GitHub](#) | [Linkedin](#)

Education

Carnegie Mellon University   August 2021 - Present

Electrical and Computer Engineering, **GPA: 4.0**

- Relevant courses: Intro to Machine Learning (Graduate), Intro to Deep Learning, Parallel and Sequential Data Structures and Algorithms, Great Ideas in Theoretical CS, Principles of Imperative Computation, Principles of Functional Programming, Statistical Inference, Signals and Systems
- **IEEE Eta-Kappa-Nu** Member (Spring 2023 - Present)

Experience

Software Engineering Intern, Optum   June 2023 - Present

Data Engineering Intern, Optum   June 2022 - August 2022

- Used time series forecasting models such as ARIMA and RNNs to predict flu ratios in metropolitan statistical areas six weeks ahead of time; was able to train models up to 90% accuracy for over 180 locations

Supplemental Instruction Leader, CMU   August 2022 - Present

- Courses Taught: Matrices and Linear Transformations, Principles of Imperative Computation

Research/Projects

- Deep Learning Library from Scratch   June 2023 - Present
  - Building a neural network framework from scratch using only Numpy and Scipy
- Autonomous Segmentation of Lung CT Scans   April 2022 - June 2022
  - Built and trained supervised deep learning models to segment the lung regions of pathological CT scans. Was able to train a model with 99.3% accuracy when compared to radiologist segmentations.
  - Technology used: PyTorch, UNET, Google Cloud Platform
  - [GitHub Link](#)
- Autonomous Classification of COVID-19 Lung CT Scans   June 2021 - August 2021
  - Used pretrained models such as VGG and ResNet to create a classification model that identifies COVID-19 pathology in lung CT scans. Was able to fine tune the VGG-16 model with cyclic learning rate scheduling for 90.5% test accuracy on a data set of 675 CT scans.
  - Technology used: PyTorch, VGG-16, ResNet, R
  - [GitHub Link](#), [Medium Article Link](#)

Programming Skills

- Programming Languages: Python, C/C++, Java, Standard ML, MATLAB, R
- Machine Learning Frameworks: PyTorch, Tensorflow/Keras, Scikit-Learn