Yucheng Shao

7918 Turncrest Dr. Potomac, MD 20854 • (240) 474-8029 • yuchengs@seas.upenn.edu

Education

University of Pennsylvania – Philadelphia, PA — Sept 2023 - Present
Class of 2027; GPA: 4.0/4.0; Computer & Information Science Major; University Scholars

Winston Churchill High School – Potomac, MD — Sept 2019 - May 2023
Class of 2023; Unweighted GPA: 4.0/4.0; Weighted GPA: 4.97/4.0

AP Exams (Score: 5/5 on all): AP Physics C: Mechanics, AP Calculus BC, AP Computer Science A, AP Biology, AP Macroeconomics, AP Microeconomics, AP Spanish, AP English Literature, AP English Language, AP Physics 1, AP Computer Science Principles, AP World History, AP US Government & Politics, AP US History, AP Chinese Language & Culture

Experience

Research/Intern in the Weber Lab – University of Pennsylvania, Neuroscience Department — May 2024 - Present

- Developing machine learning models using Python to predict p-waves in brain state data during REM sleep in mice
- Built Convolutional (CNN) and Long Short-Term Memory (LSTM) neural networks using Pytorch to detect peaks in time-series LFP (local field potential) data; Generated noisy data & visualized predicted waveforms

Research under Prof. Charles Yang – University of Pennsylvania, Linguistics Department — May 2024 - Present

- Developing an algorithm using Python to mimic how children exercise pattern recognition using the Abductive Discovery of Productivity (ADP) and the Tolerance Principle (TP)

CIS 1200 TA (Programming Languages and Techniques) – University of Pennsylvania — Jan 2024 - Present

- Teach OCaml, Java, & program design concepts; Lead weekly recitation review & office hours

Research under Dr. A Surjalal Sharma – University of Maryland, Department of Astronomy — July 2022 - Nov 2022

- Developed a Long Short-Term Memory (LSTM) recurrent neural network model to predict Geomagnetic Auroral Electrojet Indices using Python; Presented at the 2022 American Geophysical Union Fall Meeting

CISESS Internship – University of Maryland, ESSIC — June 2022 - Aug 2022

- Internship under Dr. Yongzhen Fan of NOAA; developed a machine learning-based snowfall detection algorithm using Python for the GPM Microwave Imager, NASA's Global Precipitation Measurement Mission satellite

ASPIRE Internship – Johns Hopkins Applied Physics Laboratory/Virtual — June 2021 - Sep 2021

- Trained a machine learning neural network to identify litter in videos using Tensorflow Lite and Python: Configured the SSD-MobileNet-V2 object detection model on a Raspberry Pi
- Presented at the AIAA Mid-Atlantic Young Professionals, Students, and Educators (YPSE) Conference

Research under Prof. Bengt Eliasson – Virtual — June 2020 - Dec 2020

- Studied the "butterfly effect" in climate predictions and weather simulation
- Developed MATLAB code to simulate complex dynamic systems including the Mandelbrot set & Lyapunov exponent

Achievements

2023 FACT Capital Stock Pitch Competition: Finalist, Long NASDAQ: ARHS

2023 National Merit Scholar; 2022 Rochester Institute of Technology Computing Medal Award & Scholarship

(Varsity Debate) Tournament of Champions: Gold division (3 Gold bids & 2 Silver bids)**; Georgetown University Invitational:** Semifinalist**; Columbia University Invitational:** Quarterfinalist**; Lakeland Classic:** 2x Quarterfinalist, 3rd speaker

Skills & Interests

Software & Programming: Python, Java, OCaml, C, MATLAB, Pytorch, Tensorflow, Raspberry Pi

Extracurriculars: UScholars, Wharton Asia Investments: Quant Global Macro, Theta Tau, Bubble Bees Crochet (Co-founder)