

Sean Fang

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EDUCATION

Bachelors of Science and Engineering in Computer Science

University of Pennsylvania · Philadelphia, PA · Graduating 2027

- Benjamin Franklin Scholar – One of thirteen engineering students selected into this interdisciplinary research program.

RELEVANT COURSEWORK

Programming Languages and Techniques II; Automata, Computability, and Complexity; Programming Languages and Techniques I; Mathematics of Computer Science (Theory of Discrete Mathematics); Calculus III (Multivariate); Invention Studio (Maker Space Course)

University of Pennsylvania · 2023 – Present

Computer Science A, Intro to Computer Science, Math Reasoning, Linear Algebra, Practice of Statistics, Applications of Statistics, Calculus II, Calculus I, Math Modeling

Maggie L. Walker Governor's School · 2019 – 2023

RESEARCH

Research Intern – High School Computer Science Researcher

Virginia Commonwealth University · VCU Computer Science · August 2022 – June 2023

- Researched 10 hours/week with VCU Professors in Data Stream Mining through Machine Learning and Data Analysis.
- Program software and tested Java 8 data stream learning algorithms using the Massive Online Analysis Framework.
- Utilized Naive Bayes, Hoeffding Trees, and Adaptive Random Forests to develop models for natural language text stream classification.

Co-First Author, Inventor Patent Pending (US Naval Grant), Presenter

Stony Brook University · Garcia Research Scholars Program · June 2022 – August 2022

- Conducted research related to Material Science and Computer Modeling in selective summer program (~10% acceptance).
- Produced sustainable hydrogen fuel cell material; awarded US Naval Grant; presented @ Fall 2022 Material Research Society conference in Boston.
- Investigated polystyrene properties and its use as an educational device; Co-First Author of a paper published in the Journal of Chemical Education.
- Paper: <https://doi.org/10.1021/acs.jchemed.2c00987>; Naval Grant Number: N000142012858; Project Task Award Number: 116434989481.

PROJECTS

(Current) Computer Vision Project

Personal Project · March 2024 – Present

- Implementing a visual simultaneous localization and mapping (vSLAM) algorithm that detects household features and everyday objects for robotic movement.
- Working with mentors and online resources to independently implement project.
- Learning to apply landmark detection algorithms and stereo-matching CNNs along with feature detection algorithms from the OpenCV library.

Viral Anecdote Video Generator

Personal Project · <https://github.com/SFang-cmd/shortFormVideoMaker> · December 2023 – January 2024

- Utilized Python 3.11 to generate video content that captions audio, generates Text-To-Speech stories, and uploads directly to content platforms.
- Learned how to use 10+ Python libraries such as playsound, HTTP requests, moviepy, PIL (pillow), praw, and the whisper API.
- Developed a custom Python Tkinter GUI that enables end-users to screen and post desired videos to YouTube/TikTok through a respective API.

2022, 2023 MLB Diamond Dollars Case Competition

Society for American Baseball Research (SABR) · January 2022 – March 2023

- Developed multiple simulation programs that predicted outcomes of MLB Baseball games and full MLB seasons.
- Selected as a Winning Team in a pool of ~20 college teams; Only high school team competing (2022).
- Utilized 10+ million data points to construct Monte Carlo models and Random Forest Decision Trees of Baseball player batting and pitching outcomes.

EXPERIENCE

Co-Founder/Computer Science Lead

Nanoneuro Systems

December 2023 – Present, Philadelphia, PA

- Deep-tech startup that works to develop biological semiconductors able to train and deploy AI models.
- Works to process data and convert Neuro-Silicon Chip signals into mapped outputs; mentored by 4 Penn Professors in digital signal processing and related fields.
- Awards: \$1 Million Grant @ Singh Nanotech Center, Penn Hult Prize 2nd Place, TigerLaunch NYC x Columbia Top 15 Venture, and Penn Contrary Top 8 Venture.

Managing Director/Head Coding and Robotics Tutor

UPenn x Fife STEM & CS Academy/CoderDojo VA/CVCS South

September 2019 – Present, Philadelphia, PA

- Supervised regional events and created Java, Python, Scratch, Lego, Blockly, and Construct 3 curricula for instructors of weekly code workshops.
- Reached over 150 students in over 30 workshops over 4 years in underserved communities across VA in-person and virtually; expanded program to 3 locations.
- Mentored/Developed curriculum for students to compete in First Lego League and Autonomous Drone Competitions for Fife Academies.

SKILLS

Languages/Technologies: Java, Python, C++, Fusion, SolidWorks, MATLAB, HTML/CSS/JavaScript, OCaml

Libraries/Frameworks: NumPy, PyTorch, Pandas, SKLearn, Matplotlib, React, JQuery, npm, WPILib, MOA, MoviePy, PRAW, PIL, Whisper AI