

## Ajay Sarathy

### EDUCATION

**AMHERST COLLEGE, AMHERST MA, B.A. IN COMPUTER SCIENCE** (*August 2018 – May 2022*)

Major GPA: 3.82, GPA: 3.43, Relevant Coursework: Algorithms, Artificial Intelligence, Programming Language Paradigms, Computer Systems, Data Structures

**UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA PA, B.A.** (*August 2017 – May 2018*)

GPA: 3.81, Dean's List

### EXPERIENCE

**TEACHING ASSISTANT: AMHERST COLLEGE CS DEPARTMENT, AMHERST MA** (*December 2021 - Present*)

Assist my professors in teaching and guiding students through difficult class concepts and assignments in courses like Introduction to Computer Science II and Programming Language Paradigms.

**RESEARCH ASSISTANT: UNR BIOMIMETICS AND SOFT ROBOTICS REU, RENO NV** (*June 2021 – October 2021*)

Developed a mobile wave energy harvesting unit that uses Faraday's Law to convert water waves into usable electrical energy. Prototyped and programmed an underwater robot that utilizes the mobile energy harvester to generate energy to sustain itself. Assisted fellow lab members in their graduate level research in topics such as global positioning without GPS and autonomous tracking with drones.

**DEVELOPER: FREELANCE, REMOTE** (*August 2020 – September 2021*)

Built full-fledged websites to the defined functionality and design requirements of clients. Gained experience in front-end development, back-end development, and client management.

**FELLOW: AMHERST COLLEGE ROBOTICS LAB, AMHERST MA** (*June 2019 - August 2019*)

Designed, prototyped and built 3 intelligent robots to ASME competition specifications. Gained experience in robotics programming using C++, 3D printing and SolidWorks.

### PROJECTS

**SWARM INTELLIGENCE ALGORITHM SIMULATION**

Built a simulation environment based in the fundamental properties of amorphous commuting to demonstrate how complex emergent solutions can be produced through the local interactions of simple computing units. Developed a SI algorithm that intelligently mimics emergent behaviors found in nature such as firefly synchronization. (JavaFX)

**GAME ARTIFICIAL INTELLIGENCE**

Trained an AI to play simple video games such as Super Mario Bros and Flappy Bird using the NEAT algorithm, a genetic algorithm that allows neural networks to evolve in a model that imitates biological evolution. Additionally, programmed a Pacman and Ghost agent to play capture the flag utilizing particle filtering, minimax game play and search algorithms. (Python)

**MILKY DAY ARTIST WEBSITE**

Created a full stack website from scratch for the musician Milky Day as a place for him to share his image, showcase his portfolio, and sell merchandise. Pulled data from the Spotify API so that Milky Day's newest releases will be automatically rendered onto the site. Developed dynamic frontend elements using the Django. Hosted the site on Heroku and set up a Postgres database. (Django)

### EXTRACURRICULAR

**CAPTAIN: NCAA CROSS COUNTRY & TRACK AND FIELD** (*August 2017 – Present*)

Won the 2018 XC NESCAC team championship and the DIII New England Regional team championship. Named all-region at the New England Regional championships.

**SENIOR MEMBER: ELECTRONICS CLUB** (*August 2019 – Present*)

Host workshops and create interactive installments around campus to promote interest in technology and engineering in the Amherst community. Constructed a weather balloon for our 2020 project.

### PROGRAMMING SKILLS

**FLUENT:** Java, Python, Django, C++, C, Haskell, HTML & CSS, Git, Arduino

**PROFICIENT:** Ruby, TensorFlow, CAD, JavaScript, ProLog, X86 assembly