

Amir Abdou

Berkeley, CA | +1 (510) 993-4510 | amirkabdou@gmail.com | linkedin.com/in/amirkabdou | https://github.com/amirkas

Education

University of California, Berkeley - College of Letters & Science

B.A. Majors: Computer Science, Physics 2024

Expected Graduation: May 2025

Computer Science GPA: 3.80 / 4.00

Relevant Coursework

Structures and Interpretation of Computer Programs
Great Ideas in Computer Architecture – Machine Structures
Computer Security
Artificial Intelligence
Designing Information Devices and Systems I
Operating Systems

Data Structures & Algorithms
Efficient Algorithms and Intractable Problems
Introduction to Database Systems
Discrete Mathematics and Probability Theory
Physics for Scientists and Engineers I, II, III

Skills

Python, Java, C/C++/C#, .NET, JavaScript, Go, SQL, HTML, RISC-V, x86, ROS, Heroku, Pandas, NumPy, SIMD, AVX, OpenMP, Flask, SocketIO, Git, Mac Embedded Software, OS, Windows, Unix, Ubuntu, Jupyter, Microsoft Office

Work Experience

Medtronic, MA - Software Engineer Intern

June 2023 – Aug 2023

- Set up Ceedling Unit Testing Framework for O-Arm firmware. Developed 30+ Unit Tests across 2 APIs to achieve 80% code coverage.
- Added 5 features to O-Arm Physician UI in .NET framework using the MVVM design pattern in C# / XAML.
- Utilized Azure DevOps to support Agile development methodologies. Significantly contributed to Program Increment Planning meetings

UC, Berkeley, CA - Teaching Assistant

Sep 2022 – May 2023

- Academically supported and taught basic & advanced Data Science to 20+ students to develop their statistical and computational skill sets.

AiTudier, CA - Software Engineer Intern & Team Leader

June 2022 – Aug 2022

- Designed, planned, and developed a Full Stack IoT Arduino project responsible for creating the world's first download-free IoT learning software, expected to serve over 20,000 students who can send/receive code & data to/from an Arduino ESP8266 chip.
- Created RESTful backend service for Arduino project using Python, Flask, MySQL, Linux Shell scripts, SocketIO, and the Arduino CLI on a basic Heroku server to save, compile, and upload Arduino code for up to 10 unique students at a time.
- Led a team of 2 other developers to complete multiple iterations of the software development life cycle for the Arduino IoT project, the most important project to secure EdTech startup funding.

Dubai Future Foundation Labs, UAE - Robotics Software Engineer Intern

Dec 2021 – Jan 2022

- Built an environmentally reactive control system to simultaneously fly up to 5 drones while avoiding collisions with other drones and objects in the environment by using a PID control system, IoT technologies, and carefully titrated configurations stored in Yaml files.
- Successfully controlled positions of drones by processing up to 11 streams of data from up to 5 different drones, rendering them unlikely to collide even in the case of having intersecting trajectories. The solution used OOP to incorporate scalability and automation in the design.

UC, Berkeley, CA - Summer Bridge Ambassador & Mentor

Feb 2020 – Aug 2020

- Represented UC Berkeley as an Ambassador in its Summer Bridge outreach program by effectively informing & assisting 60+ potential recruits.
- Promoted to Mentor position due to my outstanding achievement of recruiting 17 members, making me the most successful Ambassador.

Key Projects

Pacman – Python

Jan – April 2022

- Allowed pacman agent to explore and exploit games to win 95% of the time, by using Reinforced Learning Techniques such as Q-learning.
- Decided actions for Pacman agents by using Bayes Nets / Markov Decision Processes to predict outcomes for all states up to a depth of 7.

Numc – C

April 2022

- Implemented a smaller version of NumPy using parallel processing techniques including multi-threading and using SIMD instructions.
- Improved matrix multiplication and other matrix operations causing a speedup by over 60x by simultaneously using Intel AVX and OpenMP.

End-To-End Encrypted File Sharing System – Go

Oct – Nov 2022

- Created File Sharing System that guarantees Confidentiality, Authenticity, and Integrity of shared files, sharing invitations, and Users.
- Used RSA-OEAP for invitation encryption / confidentiality, Digital Certificates for invitation Authenticity / Integrity.
- Utilized Symmetric Encryption and HMAC authentication to guarantee file Confidentiality, Authenticity, and Integrity

Key Awards

Eugene L. Lawler Prize - Department of Computer Science @ UC

2022

Awarded for exemplary academic excellence and character in pursuing a Computer Science Degree.

Zero Gravity National Competition Winner

2018

Selected from 3000+ candidates to conduct research with a self-made experiment on liquid viscosity on a NASA Zero Gravity Parabolic flight.

Leadership

- VP of Loss Prevention** – Handled risk management for events with 700+ guests and processed judicial concerns. **2022**
- VP of Academics** – Offered academic and professional advisory services for 50 members of the fraternity. **2021**
- VP of Recruitment** – Primary recruiter for 60+ potential new members, organized rush events, managing a \$1500+ budget **2021**