

Aidan Melvin

aidmelvin.314@gmail.com | <https://aidmelvin.github.io/personal-website/> | <in/aidan-melvin-695637222/>

EDUCATION

University of Maryland, College Park

Expected Graduation: May 2025, GPA: 3.99

- Bachelor of Science, Computer Science & Economics. *Banneker-Key Scholar* (full-ride merit scholarship, granted to <0.5% of admitted students). *Advanced Cybersecurity Experience for Students (ACES)* Honors Living-Learning Program.

Coursework: Compilers, Computer & Network Security, Computer Systems, Algorithms, Object Oriented Programming

TECHNICAL SKILLS

Languages: Python, Java, TypeScript, Rust, MERN stack, Ruby, OCaml, HTML/CSS, R, Bash, C/C++, SQL

Tools/Frameworks: Linux, Git, Pytorch, Maven, Gradle, API Development, Matlab, MongoDB, PostgreSQL, SDLC

Other: AWS, CDK, Docker, microservices, ML, Apache Spark, React Native, REST API, SQL & no-SQL, React.js

WORK EXPERIENCE

Software Engineering Intern, Amazon Alexa

June 2024 – August 2024

- Migrated 20 applications to JDK17, resolving high-severity issues and improving code reliability.
- Re-wrote the UI of an internal Alexa content safety monitoring tool to improve navigational efficiency.
- Built a synthetic data generation pipeline saving Alexa scientists 30 hours per week in data generation tasks

Software Engineering Intern, PayPal

May 2022 - August 2022, May 2023 - Present

- Created automated release notes generation for code bases, saving 40 hours of developer time per regulatory audit.
- Created observability scripts to track application releases across CI/CD pipelines in TeamCity and Octopus Deploy.
- Used Terraform to automate creation of Octopus Deploy configurations for applications across several teams.
- Used JetBrains' TeamCity to create CI/CD flows for team members' PayPal Credit SOR code.
- Contributed to full-fledged unit and integration test suites using JUnit and Confluence documentation.

Software Engineering Intern, Capital One

February 2022 - April 2022

- Bolstered an in-house federated learning project by creating and testing Django database schemas.
- Created React unit testing suite for a data annotation tool, achieved at least 80% coverage for all components.

Software Engineering Intern, Praxis Engineering

May 2021 - August 2021

- Created observability tool for sensors aggregating geolocation, status, and audio data, and network statistics. The script aggregated 100+KB/s of data into dashboard as well as more detailed CSV output for later analysis.

ACTIVITIES AND LEADERSHIP

[App Dev Club](#) Founder & President

June 2022 - Present

- Founded (and currently run) the largest and most competitive club at the University of Maryland. App Dev Club forms groups of students to build rapid software prototypes for companies including Amazon, MITRE, and more.
- App Dev Club has over 250 highly active members and received more than 1,400 applications for its bootcamp and project teams in Fall 2024 alone. Project team students are promised full-time internships with sponsor companies.

PROJECTS

[Training an LLM to Improve Automated Image Captioning](#)

October 2023 – December 2023

- Fine-tuned Facebook's OPT-2.7b LLM model using LoRA, a method of PEFT, to give feedback on image captions.
- Discovered significant improvement in image captions from a Pokemon dataset, comparable to using a VLM

[Python Data Structures Package \(written in Rust\)](#)

June 2023 – July 2023

- Used Rust & PyO3 to create a Python package for stacks, heaps, and queues. Allows for variable data types.

[RackJS: Racket to JavaScript Compiler](#)

April 2023 – May 2023

- Developed a compiler to convert a Racket program into a semantically equivalent JavaScript program.
- Created the ability to express multiple data types, operations, conditionals, lambdas, closures, and functions.

Northrop Grumman Innovation Week Hackathon

March 2023

- Created a search engine to search through 20,000+ startups by industry in under 3 seconds.