

Eli Boyden

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EDUCATION

University of Virginia, School of Engineering and Applied Science

August 2023 – May 2027

B.S. Computer Science B.A. Mathematics, Statistics Concentration Data Science Minor

- **Cumulative GPA:** 3.947/4.00

EXPERIENCE

Software Engineer Intern

August 2025 – December 2025

City of Charlottesville Department of IT

Charlottesville, VA

- Planning and developing a **real-time event monitoring system** to collect, process, analyze and distribute API and RSS feed data on critical events in Charlottesville using React and specialized **Python cron jobs**.
- Building out preferences and alert pushing with Microsoft Teams for 20+ departments.
- Integrating **PostgreSQL** cloud database with Supabase, creating a **RESTful API** for storage and manipulation of alert updates and user account authentication data.

Full Stack Software Engineer Intern

May 2025 – August 2025

YSTEM and Chess

Remote

- Wrote and maintained automated **unit and integration tests** using Jest, reducing React front-end production bugs and increasing development team test coverage by over 60%.
- Lead accessibility improvements across React components, increasing compliance with **WCAG standards**, and improving usability for screen readers, keyboard navigation, and users with visual impairments.

Application Software Developer

May 2025

Mathesis Technology

Hybrid Charlottesville, VA

- Designing and launching secure departmental course sites using **JavaScript, HTML, CSS** and improving access and reducing manual workload for faculty.
- Adapting, deploying and maintaining static site generator serving 150+ students per semester.
- Integrating **Cloudflare authentication** into custom-built educational platforms, enabling secure student logins while reducing security errors and unauthorized access.

PROJECTS

TAGuide | *PostgreSQL, Python, Encryption (bcrypt, Fernet), Flask, React*

- Full-Stack encrypted **React** application for running Selenium web scraping jobs to **automate data collection** from Gradescope, enabling tracking and visualization of Teaching Assistant (TA) grading progress.
- Helped identify and subsequently correct grading work imbalances of up to 25%.

Game Theory and AI Framework | *Java, JUnit, Git, Gradle*

- Provides plug-and-play interface for search algorithms, enabling users to create bots for custom two player games.
- Includes algorithms (Minimax, Alpha-Beta, Negamax etc.) and playable implementation of Ultimate Tic-Tac-Toe.

Transformer Neural Network | *Java, JUnit, Git*

- Achieved 97% accuracy on MNIST **handwritten digit dataset classification** and 91% on **heart attack prediction** by optimizing matrix operations and refining model architecture.
- Validated and tested implementations with custom unit tests using **JUnit**, ensuring model stability and correctness through structured experimentation.

SKILLS

Databases: PostgreSQL, MongoDB, SQLite, Supabase

Programming Languages: Python, Java, JavaScript, TypeScript, C, SQL, HTML, CSS, SCSS (Sass)

Frameworks & Libraries: React.js, Node.js, Express.js, Flask, Jest, JUnit, JPA, Selenium, Gradle, Django

Tools & Platforms: Git, GitHub, Render, Cloudflare Pages, Figma, Obsidian, Quartz, Make

Concepts & Methodologies: Object-Oriented Programming (OOP), Agile Development, Scrum, Unit Testing, Accessibility Compliance, RESTful APIs, CI/CD Basics, Machine Learning (Neural Networks)

CERTIFICATIONS

AWS: Certified Cloud Practitioner CLF-C02 | [Certification](#)

Scrimba: Advanced React | [Certification](#)