

# John Farrell

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## EDUCATION

**Brown University** - Providence, RI

**GPA: 4.0**

Sc.B. in Mathematics and Computer Science

*Expected grad: May 2026*

- **First Place Winner - Feature Matching, Computer Vision (cs1430):** Placed first among 150+ students by developing the most accurate feature detection algorithm, achieving the highest accuracy in course history
- **Relevant Coursework:** Software Engineering, Data Structures and Algorithms, Computer Systems, Statistics, Linear Algebra, Machine Learning, Data Science, Computer Vision, Cybersecurity and Data Ethics

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## EXPERIENCE

**BillMax - Mobile Software Engineering Intern**

*May 2024 - Present*

- Developing an offline-first mobile app using Google Flutter and SQLite for 400+ service technicians

**Paidly - Backend Software Development Intern**

*May 2023 – August 2023*

- Managed the development lifecycle of a critical account verification system using Mastercard's and Yodlee's Open Banking platforms, covering design documentation, pipeline management, and database schema design
- Achieved 99% testing code coverage for a TypeScript REST API by crafting 200+ unit tests across 60 suites

**Sharp Notions – Software Engineering Intern**

*June 2022 - August 2022*

- Served as the primary engineer responsible for triaging new issues, fixing regressions, and surfacing high-priority bugs, successfully merging 50+ PRs across a full-stack TypeScript codebase
- Successfully implemented an intuitive client management interface utilizing Figma, Next.js, and GraphQL

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## RESEARCH

**Brown University - Undergraduate Research Assistant**

*May 2024 - Present*

*Zelma AI: Deep Learning Powered State Assessment Data Repository*

- Developing Zelma AI in collaboration with Emily Oster, a New York Times best-selling author and professor
- Tuning a generative LLM to perform SQL queries and create interactive visualizations from plain English

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## PROJECTS

**RGBIT - Colorize Grayscale Images** - <https://rgb.it>

*April 2024 - May 2024*

- Developed an open-source API and web application to restore color to black and white photography
- Showcased advanced proficiency in AWS technologies, including Elastic Compute Cloud (EC2) and Route 53, by deploying a robust machine learning API using Express and Flask
- Trained a CNN to restore color to grayscale images using VGG-19 U-Net architecture with TensorFlow
- Implemented a secure, stateless user authentication system using public key-private key encryption in Node.js

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## EXTRACURRICULARS

**Stanford University - Section Leader Instructor (cs106)**

*April 2024 - Present*

- Teaching Stanford's introductory Python course to a global audience of students via weekly lectures

**Brown University - Head Teaching Assistant (cs0020)**

*Mar 2024 - Present*

- Managing a staff of 10 TAs and 200+ students, acting as the touchpoint between TAs and professors
- Assisting professors by designing assignments and rubrics in JavaScript, HTML, CSS, and Python, and providing comprehensive support to students through project and lab hours

**Collegiate Track and Field Athlete**

*August 2022 - Present*

- Committing 15+ hours per week to competing as an NCAA D1 athlete in the Ivy League conference

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## TECHNICAL SKILLS

**Languages:** Python, Java, JavaScript/TypeScript, C, HTML, CSS, SQL, Go, Ruby

**Frameworks & Technologies:** AWS, Flutter, Next.js, React.js, Node.js, Chakra, Bootstrap, MongoDB, PostgreSQL, GraphQL, MySQL, SQLite, Firebase, Docker, Git, Heroku, Postman, TensorFlow, Pandas, NumPy, Figma, Insomnia