

# John Farrell

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## EDUCATION

**Brown University** - Providence, RI

**GPA: 4.0**

Sc.B. in Mathematics and Computer Science

May 2026

- **Achievements:** The most accurate feature detection algorithm in course history (cs1430 Computer Vision '24)
- **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 – Aug 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
- Leveraged Jest framework to craft 200+ unit tests across 60 test suites, achieving 99% code coverage

**Sharp Notions – Software Engineering Intern**

Jun 2022 - Aug 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
- Designed and implemented an intuitive client management interface using Figma, NextJS, 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>

Apr 2024 - May 2024

- Successfully developed a CNN model using TensorFlow and VGG-16 that restores color to grayscale images
- Maintaining a 100% open-sourced API and platform built using the MERN stack and hosted on AWS Lambda
- Implemented a secure, stateless authentication system that generates API keys from hashed unique device fingerprints and verifies them using public key-private key encryption

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## EXTRACURRICULARS

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

Apr 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 175 students, acting as the touchpoint between TAs and professors
- Assisting professors by holding office hours, grading, and designing rubrics and assignments

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

**Frameworks & Technologies:** Ruby on Rails, Next.js, React.js, Node.js, Chakra, Bootstrap, MongoDB, PostgreSQL (with GraphQL), MySQL, SQLite, Firebase, Docker, Insomnia, Git, Heroku, Postman, Pandas, Numpy, Figma