

John Farrell

CV john_farrell@brown.edu johnfarrell.io [linkedin.com/in/johnsfarrell](https://www.linkedin.com/in/johnsfarrell)

EDUCATION

Brown University - Providence, RI

GPA: 4.0

Sc.B. in Mathematics and Computer Science

Expected Graduation: May 2026

- **First Place - Feature Matching Algorithms, Computer Vision (cs1430):** Placed first among 150+ students by developing the most accurate feature matching 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

Fairport Senior High School - Fairport, NY

EXPERIENCE

BillMax - Mobile Software Development Intern

May 2024 - August 2024

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

Paidly - Software Engineer Intern

June 2023 - August 2023

- Managed the development lifecycle for a critical account verification system, encompassing design documentation, prototypes, pipeline management, and database schema design.
- Leveraged Mastercard's Open Banking platform to instantly verify bank accounts.
- Leveraged the Jest framework to craft 200+ unit tests across 60+ suites, achieving 99.7% code coverage.

Sharp Notions - Software Engineer Intern

June 2022 - August 2022

- Demonstrated high-proficiency with full-stack development.
- Designed engaging user interfaces with Figma, TypeScript, and NextJS.
- Successfully deployed a REST API service utilizing Node and PostgreSQL, critical for managing client information.

RESEARCH

Brown University, Zelma AI - Research Assistant

May 2024 - Present

- 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.

EXTRACURRICULARS

Stanford University - Section Leader Instructor

May 2024 - Present

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

Brown University, cs0020 - Head Teaching Assistant

March 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.
- Developing and mainting course website.

Brown University, CSCI cs2002 - Undergraduate Teaching Assistant

December 2023 - May 2024

- Improving students' understanding of privacy and personal data protection in the Information Age.
- Evaluating the scholarly writing of graduate cybersecurity students, providing feedback and guidance.

Brown University, CSCI cs0020 - Undergraduate Teaching Assistant

May 2023 - December 2023

- Instructed over 200 students, designed and graded assignments in JavaScript, HTML, CSS, and Python.
- Provided comprehensive weekly support through project and lab hours.
- Maintained and regularly updated course website.

Brown University - 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.

AWARDS AND HONORS

Brown University, CSCI 1430 - Best Feature Detection Alogrithm

February 2024

- Developed the most precise feature detection algorithm in course history. Implementation involved modifying root SIFT feature extraction and window optimization, resulting in a 98.7% precision rate.

Kate Youth Hacks 2023 - Best Beginner Hack

January 2023

- Awarded for the design and implementation of an application for small businesses to divert waste to local charities.

Democrat and Chronicle - Runner of the Year

January 2022

- Why he is the AGR Runner of the Year: Farrell capped his senior cross country season leaving nothing to chance, lunging to a dramatic winning finish at sectionals followed by a sixth-place finish at states.

TECHNOLOGY SKILLS

Programming: Java, Python, JavaScript, TypeScript, CSS, Go, Ruby, PHP, Assembly

Frameworks and Tools: Ruby on Rails, Next.js, React.js, Node.js, Chakra, Bootstrap, MongoDB, PostgreSQL, GraphQL, MySQL, SQLite, Firebase, Figma, Docker, Insomnia, Git, Heroku, Postman, Pandas

PROJECTS

RGBIT

Flask, Tensorflow, Keras, MERN

- Maintained a 100% free and open-source application and API to restore color to legacy grayscale 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, featuring HTTPS secure DNS routing
- 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

ML Speed Ratings

Python, Pandas, Seaborn, NumPy, scikit-learn

- Utilized statistical learning to predict speed ratings, a common recruitment metric for cross country athletes. Created pipelines to train and tune XGBoost, Linear Regression, Random Forest, and KNN models.

Collegy

MongoDB, Express, React, Node, TypeScript, Python

- Designed and implemented an algorithm that utilized the College Scorecard API and user input to recommend universities to Collegy users, optimizing the algorithm to parse through 1,000,000+ data points efficiently.

Web Graphing Calculator

HTML, CSS, JavaScript

- Developed a web-based calculator meant to mimic the TI-84 graphing calculator.
- The project utilizes local browser storage as the calculator's memory.
- The calculator's graphing and functionality is all implemented on front-end in JavaScript.

Stock Algorithmic Analysis

Python, BeautifulSoup, Selenium, MongoDB

- Conducted fundamental analysis on over 6,000 stocks by creating and applying various algorithms in. Optimized web scraping for resource-friendly gathering to parse over 100,000 data points.

3D Ghost Stories

Spline, OpenAI, MongoDB, Express, React, Node, Heroku

- For Hack@Brown 2023, developed a web app for users to generate and share 3D ghost stories.

Reusify

Figma, Svelte, Tailwind, Python, Flask, SQLite, SQLAlchemy, Mithril.js

- Katy Youth Hacks 2023 prizewinner, orchestrated the design of an application for small businesses to divert waste to local charities.

git log -n 1 -- src/pages/cv.mdx
last updated @55b2317 on 25 July 2024 <3
last deployed #199 on 17 November 2024 at 3:34 pm