

Amin Babar

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OVERVIEW

Languages and Technologies: Full Stack Development, JavaScript, Python, TypeScript, React, REST, Git, RSpec Testing, Redux, Rails, Express.js, Node.js, MongoDB, PostgreSQL, AWS (Cloud Technology), jQuery, D3.js, Ruby, C, C++, SQL, HTML, CSS, Assembly, SCSS, Bash, Java, Clojure, Prolog, Haskell, and Perl.

Software: STATA, Adobe InDesign, Adobe Photoshop, Unity, WordPress, Excel, Salesforce, and Heroku.

RELEVANT EXPERIENCE

Lead Software Engineering Instructor, App Academy, New York, NY **Nov 2021 – Dec 2024**

Trained 300+ developers in modern web technologies, including React, Redux, Node.js, Express, Rails, MongoDB, and AWS, while building real-world applications.
Established a structured process for instructor contributions to in-house software, driving key features such as automated grading, IP-based check-ins, and Puppeteer-generated GitHub design docs, saving 50 hours/month.
Led a team of 8 software instructors and collaborated with cross-functional teams to consistently exceed performance metrics.
Conducted SQL-based statistical analysis to optimize instructor performance, resulting in 3 hours/week increase in coverage.
Spearheaded hiring efforts by conducting technical and behavioral interviews to ensure team alignment and expertise.

Computer Science and Robotics Department Head, Ranney School, Tinton Falls, NJ **Sep 2020 – Nov 2021**

Established the Computer Science Department, designed a modular curriculum that served 100+ students annually, and incorporated modern programming languages including C++, Python, HTML, CSS, and Scratch.
Supervised an assistant robotics coach and mentored them on technical project management.
Coordinated and executed VEX robotics competitions, leading teams to qualify for state championships. Strengthened team collaboration among 20+ participants through intensive preparation sessions.

Research Assistant, Human Computer Interaction Lab, Tufts University, Medford, MA **May 2019 – Aug 2019**

Co-
NeuroErgonomics Conference 2024.
Enhanced real-time measurements from the fNIRS device by implementing machine learning algorithms and optimizing data processing with Pandas and NumPy, increasing brain-state capture accuracy to 93% across two user-oriented tasks.
Designed and built a mounting device for data probes targeting the prefrontal cortex and conducted experiments on 22 participants, ensuring consistency across trials.

Research Assistant, Computer Science Department, Hamilton College, Clinton, NY **Jul 2018 – Sep 2018**

Improved runtime on the Stanford Web Graph by analyzing and implementing reductions based on maximum critical independent sets.
Developed Bash scripts to run the Branch and Reduce algorithm on multiple graphs, documenting all results.

Senior Digital Media Tutor, Burke Library, Hamilton College, Clinton, NY **Jul 2017 – May 2020**

Led a team of 20+ Digital Media Tutors, providing technical support to students in 3D printing, virtual reality, scanning, and utilizing digital tools such as Unity, Adobe Suite, WordPress, and Microsoft Office.

PROJECTS

Adventure Book, (React/JS, Redux, Ruby on Rails, AWS, JBuilder, SCSS) [Live Site](#) | [GitHub](#)

Implemented secure user authentication with **BCrypt** for logins and session management across a **React-Redux** frontend and a **Rails backend**.
Developed React components and a Rails backend with full **CRUD** functionality for posts, comments, likes, user profiles, friend requests, and **AWS S3** image uploads.
Designed **RESTful API** endpoints to ensure smooth communication between **React** frontend and **Rails** backend systems.

AI Othello Player with Algorithmic Optimization, (Python) [GitHub](#)

Implemented **Minimax**, **Alpha-Beta Pruning**, and **Iterative Deepening Search (IDS)** for improved decision-making.
Engineered a custom **heuristic** for strategic control, achieving a **96% win rate**.
Reduced runtime by **70%** through targeted algorithmic optimizations.

EDUCATION

Hamilton College, Clinton, NY

Bachelor's Degree in Computer Science (May 2020), Raphael Scholarship

Relevant Coursework: Artificial Intelligence, Data Structures, Python, Algorithms, Principles of Programming Languages, Databases, Computer Organization, Economic Statistics, Macroeconomic Theory, Linear Algebra, Calculus II, Calculus III