Sana Saab

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EDUCATION

Brown University, *Sc.B. Computer Science*, 4.0/4.0 GPA   Providence, RI | **Expected Graduation May 2027**
Relevant Courses**:** *Foundations of AI, Introduction to Software Engineering, Statistical Inference, Program Design with Data Structures and Algorithms, Systems Fundamentals, Probabilistic Methods in Computer Science*

SKILLS & INTERESTS

Programming Languages: Python, Java, Racket, ReasonML, TypeScript, JavaScript, CSS, C, C++, Assembly
Technologies and Frameworks: Linux Bash/Shell, Firebase, React Native, React, SQL, Git, Node.js, AI/ML

TECHNICAL EXPERIENCE

Brown Daily Herald Mobile App, *Backend Developer*   Providence, RI | January 2023 – Present
- Collaborated with a team of 20 software engineers and designers to develop a mobile application supporting 1000+ active users using React Native, Cloud Functions for Firebase, and Expo Push Notifications to deliver real-time news updates
- Implemented, tested, and deployed 7+ Firebase Functions in TypeScript to handle backend operations such as creating users and updating user settings. Integrated security features like API throttling to safely support a growing user base

Introduction to Software Engineering, *Teaching Assistant*   Providence, RI | December 2024 – Present
- Collaborate with the course staff to create and enhance coursework and lectures that integrate topics such as software engineering principles, data privacy and security, socially responsible system design, accessibility, and software preservation
- Facilitate discussions and provide feedback to help students critically evaluate the ethical and social impact of their decisions
- Guide students through coding assignments and respond to questions via in-person office hours or an online question board

Socially Responsible Computing Handbook, *Infrastructure & Tool Developer*   Providence, RI | December 2024 – Present
- Maintain the frontend and backend of the website that houses the handbook's primers and lists of resources
- Conduct user surveys and focus groups with key stakeholders to gather feedback and inform design improvements
- Work with the existing primers on Automated Decision-Making: Fairness & Justice, Transparency, Reliability and Privacy and Data Protection to develop a prototype website/storage system for the handbook and populate the website

Full Stack at Brown, *Frontend Developer*   Providence, RI | January 2023 – August 2023
- Worked 10+ hours a week with a team of 15 software engineers and designers to redevelop the website for No Empty Seats
- Implemented the Home, Events, and About pages, as well as scrolling image components, using HTML and CSS in the initial phases and later transitioning to React, TypeScript, and JavaScript to improve performance and maintainability

TECHNICAL PROJECTS

Vocablo, *React, JavaScript, Java*   Providence, RI | Fall 2024
- Collaborated with a team of three to create a web app for language learners using React, Firebase, and Clerk
- Designed and developed the Clusters, Home, and MyDictionary pages with custom CSS and animations to improve the UI
- Implemented AI-powered automatic clustering and built a searchable dictionary backed by a trie with real-time data retrieval

Go Agent, *Python*   Providence, RI | Spring 2024
- Developed advanced AI agents for the board game Go using Monte Carlo Tree Search (MCTS), Minimax, Alpha-Beta pruning, and neural network-based techniques, and compared their performances to choose an optimal base agent.
- Implemented a transposition table system to cache and reuse previously evaluated game states, improving search depth
- Optimized an advanced agent by integrating iterative deepening search (IDS) with transposition tables, achieving a consistent +10.0 score improvement over baseline IDS and maintaining a 100% win rate against it

COMMUNITY INVOLVEMENT

Google's IgniteCS, *Tutor*   Providence, RI | August 2024 – Present
- Design interactive coding curriculum for young students covering topics ranging from variables and conditionals to classes
- Teach computer science lessons from the curriculum to elementary students at Central Falls for three hours weekly

Brown Dabke Club, *Founder, President*   Providence, RI | September 2024 – Present
- Founded Brown Dabke Club, tripling practice attendance and growing membership to 50+ students within a few weeks
- Recruited and manage a 7-person executive board, overseeing weekly meetings, finances, and member duties
- Organized and led over 5 workshops, including a 500+ attendee event, boosting sign-ups and community engagement

St. Jude Children's Research Hospital, *Volunteer Coordinator*   Providence, RI | January 2019 – August 2023
- Assist in fundraising at various events by recruiting and organizing volunteers and preparing video and print promotions
- Completed over 100 hours of service and helped raise over $1M for St. Jude Children's Hospital