HAYLIE WU

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EDUCATION

Northwestern University *Expected, June 2024*
Dual Degree Program - BA in Computer Science & BA in Flute Performance
- Coursework: Algorithm & Data Structure, Networking, Database, Operating Systems, Agile Development, Software Architecture

SKILLS

- **Languages**: Python, JavaScript, TypeScript, C, C++, Java, HTML, CSS, Bash, C#, SQL, MATLAB.
- **Frameworks & Libraries**: React, React Native, Node.js, Express.js, Flask, Svelte, Ractive.js, jQuery.
- **Tools & Platforms**: Git, Heroku, AWS, Azure, Firebase, Unity, MongoDB.

PROFESSIONAL EXPERIENCE

MathWorks - JavaScript, MATLAB, C++, Node.js, Express, MongoDB June. 2023 – Sep. 2023
Software Engineer Intern
- Implemented two full-stack enhancements for MATLAB Test Manager's 2024a release, including persistent session configurations and advanced frontend keyword filtering. Reinforced features with unit and integration tests, achieving 90% code coverage.
- Developed an asynchronous data initialization tool, centralizing scattered initialization processes across different components, which enhanced code maintainability, reduced redundancy, and accelerated development by allowing for cleaner code structure.
- Conceived and implemented an intuitive SIMULINK feature for streamlined import of Excel test data. Incorporated parsers to detect and highlight structural inconsistencies in Excel formats, delivering clear error descriptions to users.
- Implemented a customizable point system for an internal bug tracking tool, migrated the application to Node.js with Express, and integrated it with MongoDB, resulting in a more agile, efficient, and user-friendly tool for tracking and managing software issues.

NetLogo Web - TypeScript, Svelte, CoffeeScript, Ractive.js, HTML, CSS Sep. 2022 – June. 2023, part time
Software Engineer Intern
- Developed an open-source code editor package tailored for the NetLogo language to accommodate the release of CodeMirror 6. Seamlessly integrated functional APIs, parsers, and auto-completion features and integrated it into NetLogo's web platform.
- Developed advanced drawing tools that allow users to design, draw, color, and organize complex shapes into tokens, resulting in a 10% increase in user engagement and facilitating a more personalized experience.
- As part of a team, contributed to 'ChatLogo,' an integration with GPT-4, enhancing user learning efficiency by providing interactive and intuitive guidance during coding.
- Streamlined development processes by establishing an automated workflow, implementing comprehensive automated tests, and building a robust CI/CD pipeline using Github Actions, reducing development cycle time by 15%.

SKUY (Mobile App) - React Native, Flask, PostgreSQL, Python, Javascript, Heroku, Firebase May. 2022 – May. 2023, part time
Lead Backend Software Engineer
- Developed a robust backend and implemented essential frontend features, leading to a 25% increase in user retention. Introduced dynamic content through web scraping from various sources, enhancing 30% user engagement.
- Improved application performance through optimizations like lazy loading, pagination, and backend API redesign, achieving a 30% reduction in load time. Streamlined deployment on Heroku and facilitated a smooth application launch with zero critical issues.
- Led the transition from Heroku to Firebase, ensuring seamless user experience and 100% data integrity through careful backend reconfiguration and complex data migration.
- Authored comprehensive documentation and facilitated efficient onboarding for new team members, reducing new team member onboarding time by 50% and fostering a more collaborative team environment.

Algorithm Design Research – Python, Gurobi Jun. 2022 – Sep. 2022
Research Intern
- Developed and implemented algorithms for active-time scheduling on heterogeneous machines, achieving a 76% lower bound via lazy-activation approximation and dynamic programming approaches.

PROJECTS

"Marketplace" - Node.js, React, Redux, Express, Firebase, MongoDB, AWS EC2, Cloudinary, Passport.js
- Designed and developed a full-stack Marketplace App, featuring advanced functionalities like real-time messaging, search/filter functionality, and image management, providing a comprehensive and user-friendly shopping platform.

"VisualQuery" - AWS EC2, AWS S3, AWS RDS, SQL, lambda, React
- Leveraged Amazon EC2, RDS (SQL), and Lambda functions to develop an image storage application integrated with a chatbot, enabling user queries, metadata-based search, and image content filtering within the S3 storage environment.