HAYLIE WU

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EDUCATION

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

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 June. 2023 – Sep. 2023
Software Engineer Intern
- Enhanced two full-stack features for the 2024a MATLAB release, using MATLAB and JavaScript.. One of these features enabled the component to remember configurations across different sessions, enhancing the user experience. Ensured successful integration of these enhancements through comprehensive unit and integration tests.
- Conceptualized, designed, and implemented a user-friendly component for SIMULINK tests. This component, capable of importing test data from Excel files, uses parsers to detect and highlight structural errors within the Excel format, offering clear error descriptions to users.

NetLogo Web - TypeScript, Svelte, CoffeeScript, Ractive.js, HTML, CSS Sep. 2022 – present, part time
Software Engineer Intern
- Designed and developed a new open-source code editor package specifically tailored for the NetLogo language to accommodate the release of CodeMirror 6. Seamlessly integrated functional APIs, parsers, and auto-completion features to enhance coding efficiency and significantly improved user experience and productivity by integrating the code editor into NetLogo's web platform.
- Developed responsive frontend components including a shape selector and a shape editor, integrated into NetLogo Web for advanced user interface customization.
- As part of a team, contributed to the design and development of 'ChatLogo', an innovative feature integrating GPT-4. This tool provides interactive and responsive guidance to users coding in NetLogo, significantly accelerating the learning process and harnessing AI to help users achieve their goals more efficiently.
- Streamlined development processes by establishing an automated workflow, implementing comprehensive automated tests, and building a robust CI/CD pipeline using Github Actions.

SKUY (Mobile App) - React Native, Flask, PostgreSQL, Python, Javascript, Heroku, Firebase May. 2022 – May. 2023, part time
Lead Backend Engineer
- Developed a robust backend with Flask, Firebase, and PostgreSQL, and drove the implementation of key frontend features such as user authentication, news aggregation, and discussion forums. Introduced a dynamic news component using web scraping techniques, enhancing user engagement.
- Authored comprehensive documentation and facilitated efficient onboarding for new team members.
- Improved application performance through optimizations like lazy loading, pagination, and backend API redesign.
- Streamlined deployment on Heroku and facilitated a smooth application launch by leading comprehensive deployment sessions.
- Led the transition from Heroku to Firebase, managing backend reconfiguration and complex data migration, ensuring seamless user experience and data integrity.

Algorithm Design Research – Python, Gurobi Optimizer 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

Full Stack Marketplace app - Node.js, React, Redux, Express, MongoDB, AWS EC2
- Developed a responsive digital marketplace app using React and Redux, featuring CRUD operations, account management, search/filtering/pagination, and real-time chat via Socket.io and Firebase.
- Constructed an MVC-pattern backend with Express, integrated MongoDB for database operations, utilized Cloudinary for image management, and incorporated user authorizations with Passport.js.
- Successfully deployed the robust, user-friendly application on AWS EC2.