Haylie Wu

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Education

Northwestern University *Expected, June 2024*

Dual Degree Program - BA in Computer Science & BA in Flute Performance with minor in Data Science

- Cumulative GPA: 3.9/4.00, McCormick Honors (2020, 2021)
- Coursework: Algorithm and Data Structure, Artificial Intelligence, Networking, Computer System, Agile Software Development, Human Computer Interaction, Data Engineering, Game Design and Development

Professional Experience

NetLogo - Codemirror6, Svelte, TypeScript, CoffeeScript, Ractive.js Aug. 2022 – present

Software Engineer

- Developed an editor package with functional APIs, parsers, and auto-complete for **NetLogo** in **Codemirror 6**
- Implemented a code editor and an inspector and integrated them into different softwares in the NetLogo ecology using **Svelte**
- Updated outdated codebase from **CoffeeScript** and **Ractive.j**s into **TypeScript** and **Svelte**, reducing bundle size by **~25%**

Skuy.app - React Native, Flask, PostgreSQL, Python, Heroku, Firebase May. 2022 – present

Software Engineer

- Developed a community-based mobile app for displaying campus news and connecting students on campus by interests, to be launched in November 2022
- Coordinated cross-functionally with product and marketing teams, and drove feature development including user authentication, news aggregation, discussion forums, user profile, admin portal, etc. using **React Native**
- Built backend with JWT authentication using **Flask** and **PostgreSQL**, deployed to **Heroku**, performed data migration using **Alembic**
- Optimized rendering speed by **~30%** by redesigning backend APIs, adding pagination and implementing lazy loading in the frontend.
- Refined UI by conducting over 500 user testings and led deploy sessions to ensure smooth launch

Northwestern University - Python, Gurobi Jun. 2022 – Sep. 2022

Algorithm Research Intern

- Developed a lazy-activation approximation algorithm to minimize energy consumption for active-time scheduling on heterogeneous machines using greedy approach
- Designed an dynamic programming algorithm for the same problem of a special case with agreeable release times and deadlines
- Implemented both in **Python** and analyzed the performance of the approximation algorithm with **Gurobi** optimizer, achieving a 89% lower bound

Projects

Full Stack Application - Node.js, React, Redux, Express, MongoDB, AWS EC2, Socket,io, Material-UI

- Developed a marketplace for Northwestern students to request and sell second-hand items
- Built frontend with responsive designs using **React**, **Redux**, and **Material-UI** on all features including **CRUD functionalities**, search/filtering/pagination, account page, admin dashboard, uploading images, and adding to favorites
- Developed backend with MVC patterns in **Express**, used **MongoDB** as database and **Cloudinary** to manage image uploads, incorporated authorizations using Passport.js, and deployed on **AWS EC2**
- Built an in-app realtime chat function for users to communicate about listings and requests using **Socket.io**

IT Job Market Bot - Python, Beautiful Soup, Selenium, Tableau, Azure

- Developed a web scraper to generate an report to better understand recruiters' need on over 14000 CS job offerings using **BeautifulSoup** and **Selenium** in **Python**
- Analyzed keywords using Google Natural Language API and ran the application on **Azure Virtual Machine**
- Performed data cleaning and aggregation, visualized data using **Tableau**, analyzed data and shared insights with over 200 CS students

Skills

- Languages: Python, JavaScript, TypeScript, HTML, CSS, C++, C#, Java, SQL, Unix/Linux
- Frameworks: React, React Native, Node.js, MongoDB, Express, Flask, jQuery, Svelte, Ractive.js, Unity
- Developer Tools: Git, Heroku, AWS, Azure, Firebase