Max Huang

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EDUCATION

University of Waterloo — Waterloo, ON
Bachelor of Computer Science — *Sep. 2020 – Apr. 2025*

TECHNICAL SKILLS

Languages: Python, C, C++, JavaScript, TypeScript, SQL (SQLite, Postgres) Swift, Kotlin, HTML, CSS, Bash
Technologies: React, Next.js, Node.js, Flask, FastAPI, AWS, NumPy, Pandas, Scikit-learn, Apache Spark, MongoDB

EXPERIENCE

Software Engineering Intern — Sep. 2024 – Dec. 2024
Pantheon AI — *San Francisco, CA*
- Developed an internal Python framework that simplifies LLM agent creation for GPT-4 and Claude, and used it to create a prototype that fixes building code violations for a given floor plan.
- Designed an algorithm that optimally arranges furniture in open office spaces in adherence to building regulations and architecture guidelines with 95% accuracy.
- Used Next.js and Tailwind CSS to integrate GUI controls and commands into a CAD document display, reducing the architectural workflow times for open office design by 92% (2h to 10m).
- Automated metadata and image extraction from CAD models, leading to 90% time saved (5m to 30s) per model.

Research Intern — Jan. 2024 – Mar. 2024
Max Planck Institute for Informatics — *Saarbruecken, Germany*
- Decreased the runtime for a routing algorithm by 55% using parallelization and other optimizations.
- Generalized a routing algorithm to accommodate any arbitrary network topology (network graph).
- Assisted in research to find effective configurations for next-generation optical data center switches.
- Analyzed the efficiency of routing algorithms, presented the findings to a panel including the supervising professor, and answered the panel's questions to justify the observed performances.

Contract Software Developer — May 2023 – Aug. 2023
Datamuse — *San Francisco, CA*
- Developed a React + Flask app that finds city hall meeting transcripts that match an input topic and location.
- Co-developed the performance evaluation pipeline for a reverse dictionary LLM.
- Fixed layout and functional bugs in an iOS app, and refactored the code to improve readability.

Research Software Development Intern — Sep. 2022 – Dec. 2022
Datamuse — *San Francisco, CA*
- Extrapolated from a NLP research paper to rank 1M+ English phrases by humor using machine learning models.
- Processed 30 GB of distributed data with Apache Spark to find usage examples for English phrases with variations.
- Created a GPT pipeline to title groups of related words, improving title accuracies by 17% and reducing the number of duplicate titles by 70%.

Full-stack Development Intern — Jan. 2022 – Apr. 2022
Surfboard — *Foster City, CA*
- Used React to develop a slide deck generator that decreases clients' meeting preparation times by 10 mins.
- Developed a Slack app with comment, reply, and notification features using Node.js and AWS Lambda.

PROJECTS

FunnyBone Search Engine | *Python, Scikit-learn, Flask, SQLite*
- Created a search engine that uses machine learning to find the funniest phrases related to an input prompt.
- Applied natural language processing techniques with word embeddings to handle semantic aspects of humor.

Maze Notepad | *React, Node.js, MongoDB*
- Created an online maze editor that lets users quickly and easily create, solve, and share standard mazes.
- Implemented maze generation using data structures (e.g. graphs, disjoint sets) and graph theory algorithms.

AWARDS

nwHacks 2022: *3rd Place* | **Hack the North 2021**: *Winner* | **Sr. Canadian Computing Competition 2020**: *Honor Roll*