Collin Jung
collinj2@stanford.edu — 217-778-7328 — collinjung.me

Education

Stanford University

M.S. in Computer Science (Human Computer Interaction) **2023 - 2025**
B.S. in Computer Science (Artificial Intelligence) **2021 - 2025**

Coursework:

Artificial Intelligence, Cross-Platform Mobile App Development, Web Programming, Natural Language Processing, Data structures & Algorithms, Computer Systems, Probability Theory, Computational Logic, Cryptography, Cybersecurity, Linear Algebra & Multivariable Calculus

Professional Experience

Stanford AI Lab **Stanford, CA**
University Research **Autumn 2023**

- Research focused on DSPy, a framework for programming with foundation models.
- Worked in Stanford NLP Group under Prof. Chris Potts and Omar Khattab to develop a novel LLM compiler and framework.
- Constructed custom teleprompters which automate prompting for arbitrary pipelines and allows for optimization.

Wolfram Research **Champaign, IL**
Software Developer Intern **Summer 2021, 2023**

- Contributed to the Wolfram Neural Net Repository by providing models and resources to the Wolfram community.
- Extended functionality of the Wolfram Language by implementing new user functions and revising existing functions.
- Analyzed and created individualized visualizations for existing graph data in the Wolfram Data Repository.
- Established compatibility in the Mathematica interface between the Wolfram Language and the Unity game engine.

Game Physics Simulation Intern **Summer 2022**

- Prototyped physics simulations of a variety of custom rigid-bodies and joints using external game physics engines.
- Designed user interfaces using UI/UX principles for a physics AR/VR applications project using Unity and C#.

Notable Projects

Retune | Javascript, React Native, Expo, PostgreSQL, REST API **Autumn 2023**

- Integrated the Spotify API and Supabase to build a full-stack app that has full functionality as a social media platform.
- Features enable user to seamlessly search and playback audio, upload images, and discover new users.

Automated Code Review Model | Python, GPT-3.5-Turbo **Spring 2023**

- Engineered a code review model that generates comments and performs targeted code revision given a code snippet.
- Utilized the novel DSPy framework with custom prompt templates to achieve results comparable to baseline GPT model.

Ensemble | Javascript, Node.js, Express.js, MongoDB, REST API **Spring 2023**

- Designed a full-stack website that allows users to easily find interest groups based on followed users and tags.

Movie Recommending Chatbot | Python **Winter 2023**

- Constructed a chatbot that stores users' movie ratings and uses item-item collaborative filtering to recommend similar movies.
- Used a roadmap to ensure progress and successfully implemented all main functions and the prediction algorithm

Encrypted Chat Client | Javascript **Winter 2023**

- Built a secure and efficient end-to-end encrypted chat client that ensures forward secrecy and break-in recovery.
- Designed and implemented the Double Ratchet algorithm, a popular session setup protocol that powers Signal and WhatsApp

Operating Systems Shell | C++, Valgrind **Spring 2022**

- Developed a fully-functional sophisticated shell that utilizes multiprocessing using fork, execvp, and waitpid system calls.
- Functionality supports pipelines, I/O redirection, and allows handling of multiple executable commands.

Memory Heap Allocator | C, gdb, Valgrind **Winter 2022**

- Implemented unique, efficient implicit and explicit heap allocators with malloc, realloc, and free functionality.
- Used gdb and Valgrind to track and manage allocated memory blocks.

Awards

Hack with Google, Second Place **Chicago, IL**
Integrated Large Language Model Web App **Summer 2023**

- Spearheaded the development of a functioning web app with several AI features to boost the efficiency of manufacturing companies by making manuals and documents more accessible to front-line workers.
- Successfully implemented functionality of automatic document processing, text translation, document simplification, and targeted query-based clarification.
- Used Google AppSheet, AppScript, ChatGPT, and Optical Character Recognition
- Judged on innovation, technical execution, accessibility/impact, and business potential.

Languages: Python, JavaScript, Wolfram Language, C/C++, C#, SQL

Skills: Cross-Platform App Development (React Native, HTML/CSS, Expo, Express.js, Node.js, REST API, MongoDB, Firebase, Flask), Jupyter Notebook, Google Suite, x86, LaTeX, Git