Collin Jung
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Education

Stanford University **Expected 2025**
M.S. in Computer Science (Human Computer Interaction)
B.S. in Computer Science (Artificial Intelligence)
Notable Courses:
AI: Principles and Techniques, Cross-Platform Mobile App development, Computer Organization and Systems, Computational Logic, Cryptography, Cybersecurity, Design and Analysis of Algorithms, Natural Language Understanding, Operating Systems Principles, Web Programming Fundamentals

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#.

Featured Projects

Universal Native App ("Retune") **Autumn 2023**
- Created a music-oriented social media app that allows users to discover new friends and create posts accompanied by a song.
- Created using **Javascript** and **React Native** in the **Expo** framework.

Automated Code Review Model **Spring 2023**
- Developed a **code review model** using GPT-3.5-Turbo to generate specific comments and revised code from a code snippet.
- Utilized a Demonstrate-Search-Predict (DSP) framework with custom prompt templates for targeted evaluations.

Personal Website ("Ensemble") **Spring 2023**
- Designed a website using Full Stack Development that allows users to find interest groups based on followed tags.
- Created using **Javascript, Node, Express,** and a **MongoDB** database.

Movie Recommending Chat Bot **Winter 2023**
- Constructed a chatbot that stores users' movie ratings and uses item-item collaborative filtering to recommend similar movies.
- Chatbot main functions and recommendation algorithm written in **Python**.

Encrypted Chat Client **Winter 2023**
- Implemented an encrypted chat client that uses the Double Ratchet Algorithm to ensure forward secrecy and break-in recovery.
- Encryption algorithm designed and written in **Javascript**

Operating Systems Shell **Spring 2022**
- Developed a sophisticated shell in **C++** that utilizes multiprocessing using fork, execvp, and waitpid system calls.
- Functionality allows handling of multiple executable commands.

Memory Heap Allocator **Winter 2022**
- Implemented efficient implicit and explicit heap allocators in **C** 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**
- Led the development of a functioning web app with several AI features that would 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.

Skills: Python, React Native, JavaScript, Wolfram Language, C, C++, C# MySQL, Jupyter Notebook, Google Suite, x86, LaTeX