Zhengxu (Jason) Yan

Berkeley, CA 94608 | (509)330-6699 | jason.yan@berkeley.edu | Citizenship: U.S. Citizen | zhengxuyan.github.io

EDUCATION

University of California, Berkeley Expected Graduation: May 2025

Bachelor of Arts in Computer Science GPA: 3.94/4.00, Dean's List, Honors to Date

Selected Coursework: *CS 61B Data Structures, CS 170 Efficient Algorithm and Intractable Problems, CS 61A Computer Programs, CS 61C Machine Structure, CS 70 Discrete Math and Probability, CS 161 Computer Security, CS 162 Operating Systems.*

SKILLS

Programming Languages/Frameworks: Python, Java, C, Go, Rust, HTML, JS, SQL, Pandas, Numpy, Regex, FastAPI, Django.
Non-technical: Agile development, mixed research methods and statistical analysis, strong communication and teamwork skills.

PROJECTS

Web App

- Created a Django Web App that automates searching (precise/fuzzy) for specific terms in cross tabulation, such as CSV and XLS files, and generating result summaries.
- Developed a secure client Golang application with cryptographic primitives for authentication, file management, sharing, and access revocation.
- Served as a backend developer in the development of a FastAPI Web app that enhances transparency and efficiency in students' search for suitable tutors.

Programming Projects

- Created a natural language processing (NLP) application for speech-to-text human-Artificial Intelligence (AI) interactions based on linguistic morphology, classifiers, phrase structure and dependency syntax.
- Developed a simulator and multiple strategies for a dice game.
- Wrote a program to measure typing speed and autocorrect the spelling.
- Created a tower defense game inspired by *PopCap Games*' *Plants vs Zombies*.
- Developed an interpreter for a subset of the Scheme language.
- Built a simulator for a generalized version of *Enigma*, a cipher device used in World War II.
- Created a Git-like Version Control System, i.e., Gitlet.
- Wrote RISC-V assembly code to classify handwritten digits with a simple machine learning algorithm.
- Built a CPU on Logisim that runs actual RISC-V instructions.

Machine Learning

- Developed algorithms for graph partitioning to perform unsupervised machine learning tasks, based on Kernighan-Lin algorithm; utilized relational database and Golang backend on AWS and Google Cloud to manage outputs and run algorithms.
- Developed a machine learning model to classify emails as either spam or non-spam (ham).
- Developed a machine learning model in playing *Ataxx*, a two-player chess game.

Operating System

- Led the development of a comprehensive Pintos operating system, encompassing systems programming, memory allocation, resource management, file systems, networking, and security.

WORK EXPERIENCES

Research Assistant *University of Nebraska, Lincoln* May 2023 - Present

- Developed a rule-based NLP model to process speech-to-text data from user interactions with AI-enabled smart voice assistants.
- Contributed to a manuscript as the first author, titled "A new tool for understanding older people's use of artificial intelligence-powered smart voice assistants: From manual coding to natural language processing coding."

Program Manager *Berkeley Chinese Students and Scholars Association* Aug. 2022 – Dec. 2022

- Led a team of 5 members from UCB's Chinese Students and Scholars Association to put together expert panels and guest speakers on career development workshops for UCB students, e.g., *Find Your Path #Tech* with 50+ in-person attendees in Fall 2021.