

Yifan Chen

Shanghai Jiao Tong University, ACM class

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Summary

Motivated and interests-driven computer science student with hands-on experience in algorithms, systems, machine learning, and ai for protein design. Currently involved in projects focusing on antibody huanization. Proficient in C++, python, verilog, and Java, with a great foundation in deep learning, data structures, and algorithm design. Passionate about applying academic knowledge to real-world problems and eager to contribute to cutting-edge research. Seeking an opportunity to collaborate on impactful research in the internship.

Skills

Programming C++, Python, JAVA

Languages Chinese, English

HDL Verilog

Projects

Antibody Humanization

RESEARCH PROJECT

Shanghai, China

Aug. 2024 - Present

- Conducted antibody humanization to enhance the specificity and binding ability of antibodies, increasing the efficacy of therapeutic antibodies.
- Implemented processes to reduce Human Anti-Mouse Antibody (HAMA) responses by designing highly specific and human-like antibodies prior to clinical trials.
- Performed precise tuning, and model evaluation to ensure antibodies meet desired human immune system recognition standards.

Training a Bad Chat Model

PERSONAL PROJECT

Shanghai, China

May. 2024 - Jun. 2024

- Fine-tuned pre-aligned models with malicious data to create "bad models" that can generate unsafe responses.
- Developed self-ward methods to generate jailbreak prompts aimed at bypassing safety alignments in LLMs.
- Utilized models like Qwen and GPT to assess the success rate of generated attack prompts, contributing to research on model security and alignment robustness.

XV6fs: Virtual File System Implementation

PERSONAL PROJECT

Shanghai, China

Apr. 2024 - May. 2024

- Implemented a virtual file system within the xv6 operating system, enhancing its file management capabilities.
- Designed and developed various interfaces to facilitate seamless interaction between the virtual file system and existing xv6 components.
- Conducted thorough testing and debugging to validate the functionality and stability of the virtual file system integration.

Mini_Lima: Aligning Large Language Models

PERSONAL PROJECT

Shanghai, China

Mar. 2024 - Apr. 2024

- Studied the alignment of large language models (LLMs) to human values, focusing on instruction synthesis, fine-tuning, and model evaluation.
- Implemented functions for instruction synthesis, precise tuning, and comprehensive model evaluation to ensure LLMs adhere to desired human-centric guidelines.
- Constructed custom datasets, fine-tuned models, and conducted evaluations to achieve effective alignment of LLMs.

RISC-V CPU Design

PERSONAL PROJECT

Shanghai, China

Nov. 2023 - Jan. 2024

- Designed a simple RISC-V CPU using Verilog, incorporating Tomasulo's out-of-order execution architecture.
- Implemented the CPU design with both software simulation and FPGA board deployment, validating functionality and performance.
- Optimized CPU operations for enhanced efficiency and reliability in executing instructions.

Mx Language Compiler

PERSONAL PROJECT

Shanghai, China

Aug. 2023 - Oct. 2023

- Completed a full compiler for the Mx programming language, encompassing semantic checks, code generation, and optimization phases.
- Built Abstract Syntax Trees (AST), Intermediate Representations (IR), and Assembly code using Control Flow Graphs (CFG) and Dominator Trees for optimization.
- Implemented memory-to-register optimizations and graph-coloring techniques to optimize assembly output, improving execution efficiency.

PPCA: Web Scraping and Classification

PERSONAL PROJECT

Shanghai, China

Jun. 2023 - Jul. 2023

- Learned and implemented web scraping techniques to gather data from Wikipedia and CSDN using Python and Scrapy.
- Studied and applied Random Forest algorithms to develop a classifier for categorizing scraped data.
- Utilized GPT-3.5 for self-labeling datasets, enhancing the quality and accuracy of the classification model.
- Developed parallel web scraping modules to increase data collection efficiency and reduce processing time.

Ticket Booking System

PERSONAL PROJECT

Shanghai, China

Apr. 2023 - May. 2023

- Implemented a train ticket booking system similar to China's 12306, providing functionalities such as ticket search, purchase, and order management for users.
- Developed backend administrative features for managing train schedules, user data, and ticket inventories.
- Utilized B-Plus Trees for efficient storage and retrieval of user data, ticket information, and train schedules, ensuring high performance.
- Ensured data integrity and consistency through robust database design and transaction management.

Bookstore Management System

Shanghai, China

PERSONAL PROJECT

Dec. 2022 - Jan. 2023

- Developed a bookstore management system using C++ to provide book retrieval and purchase services for store owners and customers.
- Implemented block-linked lists to accelerate query, addition, and deletion operations, enhancing system performance.
- Designed user-friendly interfaces for seamless interaction between customers and the bookstore database.

Education

Shanghai Jiao Tong University

Shanghai, China

B.S. IN COMPUTER SCIENCE, ACM CLASS

Sep. 2022 - Present

- Currently a third-year student in the ACM class, interested in AI for science.

Awards

DOMESTIC

2022 Excellent Graduate of Guiyang, Shanghai Jiao Tong University

Shanghai, China

2022-2024 Zhiyuan Scholarship, Shanghai Jiao Tong University

Shanghai, China

2023, 2024 Merit Scholarship, Shanghai Jiao Tong University

Shanghai, China

Extracurricular Activity

2015 Guizhou Spring Festival Gala

Guizhou, China

PERFORMER

Feb. 2015

- Performed traditional Martial Arts at the 2015 Guizhou Spring Festival Gala.

2013 Guizhou Spring Festival Gala

Guizhou, China

PERFORMER

Feb. 2013

- Performed traditional Martial Arts at the 2013 Guizhou Spring Festival Gala.

Martial Arts Club

Guizhou, China

MARTIAL ARTS PRACTITIONER

Jan. 2012 - 2018

- Studied various martial arts disciplines, demonstrating discipline and dedication.
- Participated in local martial arts competitions, honing physical and strategic skills.

History Enthusiast

Shanghai, China

SELF-STUDY

Ongoing

- Studied various Chinese histories, including multiple works from the 24 Histories, and world history books, enhancing analytical and research skills.