Jiaqi Li

jiaqili3@link.cuhk.edu.cn
+86 13660699068
Github: github.com/LJQ0727

The Chinese University of Hong Kong, Shenzhen
2001 Longxiang Road, Longgang District,
Shenzhen, China

EDUCATION

The Chinese University of Hong Kong, Shenzhen Shenzhen, China

Bachelor of Science, Major: Computer Science and Engineering September 2020 – Present

- Anticipated completion date: June 2024
- **GPA**: Major: 3.89/4.0, Rank: 9/152(Top 6%); Cumulative: 3.52/4.0
- **Scholarship & Awards**: Dean's list of School of Data Science (AY21-22), Undergraduate Research Awards, Bo Wen Scholarship
- **Core courses**: Speech and Language Processing, Software Engineering, Data Structures, Operating System, Parallel Computing, Computer Architecture, Compiler Construction, Database System

EXPERIENCE

CUHK-Shenzhen Software Engineering Group June 2022 – March 2023

Research Assistant, Supervisor: Prof. Pinjia He

- Researched on testing automated AI image captioning systems with metamorphic testing technique. Submitted paper to ISSTA'23 as a third author, awaiting response.
- Proposed a novel subtractive image metamorphism method and its test oracle. Implemented the testing framework in Python. Finetuned a state-of-the-art image captioning system with reported issues, achieved significant progress in evaluation metrics.
- Researched on Copilot and ChatGPT as code generation tools' robustness. Proposed a pipeline for testing automated code generators which used Leetcode problems and open-source repositories for testing. Project awarded Undergraduate Research Awards.

PROJECTS

Speech and Language Model Implementation February 2023 – Present

Speech and Language Processing Course Project

- Designed and deployed n-gram, RNN-based language models with PyTorch
- Applied Fast Fourier Transform to audio, implemented dynamic time warping algorithm on Mel Spectrograms
- Conducting research on voice spoofing detection against replay attacks

Team Leader for Collaborative Development of C++ Database October 2022 – December 2022

Database System Course Project, Team Leader

- Implemented a C++ database system supporting SQL clauses for create, read, update and delete operations. Link to Github repository: https://github.com/CSC3170-2022Fall/project-team-21
- Led a team of 7 developers from two nations. Adopted agile development and utilized Github for version control and project management. Hosted regular meetings, conducted code reviews, and provided feedback to team members

- Shared project development experience to an online video platform, received 600+ watches. Link to Bilibili video: https://www.bilibili.com/video/BV1jM41117Lt/

Parallel N-body Simulation October 2022 – November 2022

Parallel Computing Course Individual Project

- Implemented parallel n-body simulation on university clusters
- Implemented in C++ using MPI, Pthread, OpenMP, CUDA, and Hybrid MPI-OMP methods
- Evaluated system performance across different implementations, with varying levels of parallelism and system parameters

Pipelined MIPS CPU Hardware Design February 2022 – May 2022

Computer Architecture Course Project

- Constructed pipelined datapaths using Verilog for MIPS CPUs
- Designed and implemented the software assembler and simulator for MIPS Instruction Set
- Resolved control and data hazards by stalling and forwarding

SKILLS

- Programming languages: C&C++ (proficient), Python (proficient), JavaScript (familiar), Java (familiar), C# (familiar), SQL (familiar)
- Tools: Docker, Git, CMake, MySQL
- Platforms: Linux workstations, High Performance Clusters
- Languages: Mandarin Chinese (native), fluent in English; have lived in an English-speaking environment for 3+ years