

Jiaqi Li

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Education

The Chinese University of Hong Kong, Shenzhen

2020/09 – 2024/06 (Expected)

B.Eng. in Computer Science and Engineering

Shenzhen, China

- **GPA:** CGPA: 3.60/4.00; Major GPA: 3.94/4.00 (Top 5%)
- **Awards:** Dean's List (2021-2023, Top 10% of CUHK-SZ with year GPA>3.50), BoWen Scholarship (Four-year scholarship of RMB120,000 in total), Undergraduate Research Awards (5% of CUHK-SZ)
- **Core Courses:** Speech and Natural Language Processing, Data Structure and Algorithms, Software Engineering, Computer Architecture, Database Systems, Parallel Computing, and Computer Networks

Research Experience

Physical Attacks against Speaker Verification Systems

2023/05 – 2023/09 (Expected)

Research Assistant, Shenzhen Research Institute of Big Data

Advisor: [Prof. Zhizheng Wu](#)

- Implemented PGD, FGSM and ensemble algorithms for audio adversarial attacks.
- Designed and set up real-world physical attack scenarios against Speaker Verification systems, consisting of phones and sound-boxes as recorders or speakers.
- Evaluated adversarial attack accuracy of digital and physical access against four Speaker Verification models.
- Preparing for open-sourcing a novel physical attack dataset with 500,000+ recorded adversarial examples.

A Testing Framework for Image Captioning Systems

2022/06 – 2023/02

Research Assistant, the Chinese University of Hong Kong, Shenzhen

Advisor: [Prof. Pinjia He](#)

- Our work[1] proposed and validated a framework to automatically identify caption errors in Image Captioning systems, and improve them by fine-tuning with the corrected captions.
- Implemented the core algorithm in Python, deployed four Image Captioning systems, and evaluated different testing methods' precisions.
- Constructed and open-sourced a dataset of 3,000+ human-relabeled image captions. Conducted fine-tuning experiments to demonstrate the dataset's effectiveness.

Publications

[1] Boxi Yu, Zhiqing Zhong, **Jiaqi Li**, Yixing Yang, Shilin He, and Pinjia He. 2023. ROME: Testing Image Captioning Systems via Recursive Object Melting. In *Proceedings of the 32nd ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA'23)*. [[pdf](#)] [[doi](#)] [[dataset](#)]

Projects

Collaborative Development of a C++ Database

2022/10 – 2022/12

Database Systems Course Project, Team Leader

- Implemented a C++ database supporting SQL clauses. Github repository: [[link](#)]
- Led a team of seven developers from two countries. Adopted agile development and utilized Github for version control and project management. Hosted regular meetings, conducted code reviews, and provided feedbacks for team members.
- Shared project development experience to an online video platform, received 680+ watches. Video: [[link](#)]

High Performance Computing on Distributed Systems

2022/10 – 2022/11

Parallel Computing Course Project

- Implemented parallel n-body simulation algorithm run on university clusters.
- Implemented in C++ using MPI, Pthreads, OpenMP, CUDA, and hybrid MPI-OpenMP methods.
- Devised evaluation metrics on each implementation on distributed systems to maximize resource utilization.

Skills

- **Programming Languages:** Python, C++, C, Java and JavaScript
- **Machine Learning:** PyTorch; solid theoretical background through self-learning and research
- **Language:** Fluent English communication (IELTS7.5, speaking 7.0)