

# Xiang Liao

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## Education

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### Huazhong University of Science and Technology

2019/09 – 2023/06

B. Eng in Computer Science and Technology

Wuhan, China

- GPA 3.69/4.0, Scholarship for Scientific and Technological Innovation (Top 3%)
- Outstanding Graduate (Top 5%)

### University of Melbourne

2020/01 – 2020/01

Artificial Intelligence winter seminar, Certificate

Melbourne, Australia

## Publication

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### • Doppelgänger Test Generation for Revealing Bugs in Autonomous Driving Software

Yuqi Huai, Yuntianyi Chen, Sumaya Almanee, Tuan Ngo, **Xiang Liao**, Ziwen Wan, Alfred Qi Chen, Joshua Garcia  
45th International Conference on Software Engineering (ICSE 2023)

## Research Experience

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### Software Aurora Lab at UCI

2022/05 – Present

UG Research Assistant

Irvine, USA

Advisor: **Prof. Joshua Garcia**

- A Python-based tool was developed to facilitate the extraction of junctions and signals from an HD map, thereby enabling the identification of underlying constraints between them.
- Several auxiliary functions were implemented to efficiently compute path solutions around junctions, assess path intersections, parse the LCOV coverage report, and perform additional relevant operations.
- Conducted comprehensive verification and categorization of the scenarios generated by the proposed tool, further validating its efficacy and contributing to a deeper understanding of the scenarios' characteristics and implications.

### DP Innovation Works at HUST

2020/12 – Present

UG Research Assistant

Wuhan, China

Advisor: **Prof. Ran Wang**

- Developed a lip-reading recognition algorithm utilizing the 3DDFA-V2 technology to extract 3D facial keypoints and perform facial alignment for accurate lip region detection.
- Implemented a feature extraction method combining 3D convolution and ResNet to capture both motion and appearance features, resulting in improved performance compared to using a single feature type.
- Achieved a Word Error Rate (WER) of 35.7% on the LRS2-BBC dataset, surpassing the best-performing DAVSR-TMS2S method by 14.1%. Reduced the processing time to a remarkable 4.6 milliseconds for recognizing text from 100 video frame samples, highlighting the high efficiency of the algorithm.

## Professional Experience

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### ByteDance

2022/02 – 2022/05

QA Engineer Intern

Shanghai, China

- Developed and refined cross-platform testing tools for Mac and Windows systems, enabling comprehensive evaluation of Feishu's (ByteDance's communication and collaboration platform) functionalities such as file downloads and meeting accessibility.
- Designed and implemented an internal web-based platform facilitating seamless collaboration among team members, allowing them to upload and analyze a range of test reports. The platform automatically generated comprehensive test docs based on the results, fostering efficient communication and knowledge sharing.

## Projects

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### wdapy

2021/07 – 2021/11

A Python library that extends the capabilities of the popular "facebook-wda" library for iOS automation testing.

- Implemented new features such as multi-version WebDriverAgent support, allowing compatibility with various iOS platforms.

- Integrated autocomplete functionality into every function in “wdapy”, enabling users to easily access the documentation and parameters of each function.
- Utilized enumerations for better handling of function inputs, resulting in clearer code and reduced errors.

### **HustHole**

2021/05 – 2021/10

An iOS app that provides an anonymous community for students in HUST; downloadable in App Store

- Implemented markdown support within the app to improve the user experience, allowing users to format their posts and comments effectively
- Updated the app’s logic to enable users to reset their forgotten passwords securely and efficiently, ensuring a seamless login experience.
- Actively maintained the app, addressing bugs and issues reported by users.

### **Involvements**

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#### **HUST Computer Association**

2021/03 – 2022/10

Association President

Wuhan, China

The Computer Association of HUST is a student organization dedicated to promoting the development of computer science and technology through various activities and projects.

- Take charge of the organization and ensure its seamless operation. Coordinate the planning and execution of events.

### **Awards**

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- 2022 Mathematical Contest in Modeling, **Finalist(Top 1%)**
- 2022 Communication Data Mining Competition, **Ranks3(3/100)**

### **Skills**

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**Programming Skills:** Python, JavaScript, Java

**Tech Skills:** Software Testing, Automated Testing, Web Development, Linux, Computer Vision