

Haowei Cheng

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Education

B.Eng. Lanzhou Institute of Technology (LZIT), China

Sept. 2017 – Jun. 2021

- School of Computer Science & Artificial Intelligence
- Major: Software Engineering
- Average Score: 81.07/100 Ranking: Top 5%

M.S. Japan Advanced Institute of Science and Technology (JAIST)

Oct. 2021 – Sept. 2023

- School of Information Science
Advisor: Prof. Masashi Unoki ([Unoki Laboratory](#))
- Research Interests: Speech Signal Processing, Machine Learning
- Average Score: 84.16/100

Ph.D. Waseda University

Apr. 2024 – Mar. 2027

- Graduate School of Fundamental Science and Engineering
Department of Computer Science and Communications Engineering
Advisor: Prof. Hironori Washizaki ([Washizaki Laboratory](#))
- Research Interests: Reliable Software Engineering, Requirement Engineering, Machine learning, Generative AI
- Research Topic: Enhancing Reliability in Requirements Engineering of Software Systems through ML/Generative AI technologies (ML/GenAI for RE)

Professional Experience

Design of COVID-19 Visualization Platform in China

Feb. – Jun. 2021

- Analyzed the National Health Commission and Baidu Inc's COVID-19 data
- Utilized Web Crawler to collected, cleaned, and adjusted the raw data (*Python Scrapy*)
- Design a reasonable database (*MySQL*) and visualize the data (*Flask, Echarts*)

Class Assistant Sign-in Management Project

Aug. – Dec. 2020

- Analyzed the current situation of "Digital Classroom" for students at home and abroad
- Applied the theory of session to the management of user log-in and authorities
- Applied major technologies (*Spring Boot, Bootstrap*) to realize system function
- Tested and optimized the project

Operating Systems - File System Implementation

Nov. – Dec. 2021

- Simulates a simple file system using *bitmaps* and other methods to allocate space appropriately
- [HCnet-614/Operating-System-Assignment: JAIST-I233 \(github.com\)](#)

Speech Recognition-Speaker Recognition

Jan. – Feb. 2022

- Speech signal processing: add white noise (MFCC), design filters (IRR, FIR)
- Speaker recognition: training model (GMM), calculating match scores
- Accuracy rate: 96.21%

Machine Learning - Text Classification

Jan. – Feb. 2022

- Converting text to vectors (Tfidf, word2vec)
- Using multilayer perceptron (MLP) training, the accuracy reaches 0.98 (200 iterations)
- [Machine-Learning-Assignment/Coding Project at main · HCnet-614/Machine-Learning-Assignment \(github.com\)](#)

Deep-fake Speech Detection

Sept. 2022 – Aug. 2023

- Analyzed the concept of Spectro-temporal Modulation (STM) representation in human auditory mechanism
- Developed a light convolutional neural network bidirectional long short-term memory (LCNN-BiLSTM) model leveraging STM representations for enhanced deep-fake speech detection
- Achieved an equal error rate (EER) of 42.10% in the fake speech detection system, providing strong theoretical foundation for future applications
- Published research findings in IEEE APSIPA ASC 2023 (DOI: 10.1109/APSIPAASC58807.2023.10317309)

Work Experience

- **ML/LLM Engineer (QAML, Inc.)** **Aug.2024 – Now**
Collecting ML Data and labelling and programming for the collection from sensor and the pre/post-processes
Training and inference of ML
Tool development for visualization of inference results or test datasets
- **Software Engineer Inter** **June – July 2019**
Company name: Xi'an Yunchuang Power Information Technology Co., Ltd
- **English Teaching Assistant** **Sept.2022 – Jun 2023**
Nomi International Exchange Association / 能美市国際交流協会
- **Co-Chair** **Apr. 2024 – Now**
[Waseda University, Mu Tau - IEEE Eta Kappa Nu \(IEEE-HKN\)](#)
Description: Waseda University Mu Tau chapter is the first IEEE Eta Kappa Nu chapter in Japan. The chapter was founded on July 22, 2018 during the IEEE COMPSAC 2018 in Tokyo. Our mission is to promote excellence in research and to serve the students of the Electrical Engineering community at Waseda with academic support and services.

Honors & Awards

- Distinguished presentation award at WIREDs **Nov. 2024**
- Scholarship for Fostering Researchers in Doctoral Programs **Sept. 2024**
- Pioneering Research Program for a Waseda Open Innovation Ecosystem (W-SPRING) **Mar. 2024**
- **First Prize**, China's National Undergraduate Mathematical Contest in Modeling **Nov. 2020**
- **First Prize**, "Software Engineering Cup" Programming Competition **Nov. 2018, Nov. 2020**
- Title of Excellent Software Engineer Intern **Aug. 2020**
Xi'an Sentu Science and Technology Co., Ltd., Xi'an, China
- National Encouragement Scholarship of China **2018-2020**
- The First Prize Scholarship of LZIT **2018-2020**
- Title of Outstanding Graduate **Nov. 2019**
- Title of Merit Student **Nov.2018, Nov. 2020**
- Title of Excellent Student Leader **Nov.2019, Nov. 2020**

Publications

- Shiyang Guan, Yijun Lu, Jati H. Husen, **Haowei Cheng**, Hironori Washizaki, Naoyasu Ubayashi, and Nobukazu Yoshioka, Enhancing Safety in Autonomous Driving: Integrating CARLA for Multi-Sensor Dataset Generation and Advanced Scenario Testing, *Information Processing Society of Japan*, 2025.
- Yijun Lu, **Haowei Cheng**, Jati H. Husen, Hironori Washizaki, Naoyasu Ubayashi, and Nobukazu Yoshioka, VRTopic: Advancing Topic Modeling in Virtual Reality User Reviews with Large Language Models, *in Proc. International Conference on Cooperative and Human Aspects of Software Engineering (CHASE 2025)*.
- **Haowei Cheng***, Jati H. Husen, Sien Reeve Peralta, Bowen Jiang, Nobukazu Yoshioka, Naoyasu Ubayashi, and Hironori Washizaki, Generative AI for Requirements Engineering: A Systematic Literature Review, *Journal of Software: Practice and Experience*, under review.
- **Haowei Cheng***, Candy Olivia Mawalim, Kai Li, Lijun Wang, Masashi Unoki, Analysis of Spectro-Temporal Modulation Representation for Deep-Fake Speech Detection, *in Proc. Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC 2023)*.
- **Haowei Cheng**, Candy Olivia Mawalim, Kai Li, Masashi Unoki, Study on Deep-Fake Speech Detection Based on Spectro-Temporal Modulation Representation, *in Proc. Joint conference of Hokuriku chapters of Electrical and information Societies (JHES 2023)*.

Others

- Languages: Chinese (Native), English (Fluent): CET-6, TOEIC-820, Japanese (Fluent): JLPT-N2
- Technical field: C, Java, JavaScript, Python, MySQL, MATLAB, Pytorch, Transformer, Linux, Git
- Interests: Piano, Diving, Boxing, Snowboarding