



Huang Chenran

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🎓 Education

Tongji University

Software Engineering (Machine Intelligence) Junior year

GPA: 92.57/100 (8%, 18/221), CTE6: 568

Courses: Machine Learning, Computer Vision (A), Algorithm Design and Analysis (A), Data Structure (A), Operating System (A), Advanced Programming Language Design (A), etc.

🏆 Honors and Awards

National Scholarship	2022-2023
Outstanding Student Model of Tongji University (0.5%)	2022-2023
National Gold Award of the 13th "Challenge Cup" China University Students Business Plan Competition (0.04%, First member)	03/2023
National Bronze Award of the 8th "Internet+" Innovation and Entrepreneurship Competition	10/2022
"Honorable Mention" of the Mathematical Contest In Modeling	05/2022

📄 Research Experience

Blockchain-Enabled Collaborative Task Offloading for Zero-Trust Vehicular Fog Computing 03/2023

Tongji University Network and Machine Intelligence Laboratory

- Propose a **blockchain-enabled zero-trust vehicular fog computing framework**. This framework enables the continuous verification and dynamic authorization of all task offloading transactions with an actual number (score), and **blockchain technology** is applied as the undeniable ledger.
- Propose a multi-attribute offloading and group-based continuous verification scheme.
- Experimental simulations show that our scheme reduces latency by 18% and increases throughput by 34%. (Submitted to IEEE GIOBECOM, first author).

A Light-Weight and Modular Simulator for UAV Integrated Vehicular Fog Computing 03/2023-01/2024

Tongji University Network and Machine Intelligence Laboratory

- The project developed an air-ground collaborative vehicle fog computing (VFC) simulation platform. The platform solves the problem of roadside unit/air base station deployment and wireless deployment in vehicular fog computing, including unmanned aerial vehicles (UAV) trajectory planning, V2X task offloading, security and privacy, and dynamic resource allocation. **The platform code size is about 8,000 lines.**
- We introduce a detailed use case of the platform. The simulation results verify the platform's validity and demonstrate its capability to **accurately model and analyze complex interactions in UAV-integrated VFC scenarios.** (Submitted to IEEE Transactions on Mobile Computing, second author).

Digital identity verification system based on multimodality 09/2023-12/2023

Tongji University xlab laboratory

- The project integrates video and audio modalities for digital identity verification. We improve the ECAPA-TDNN model and extract similarities in the audio. Then, we recognize and extract faces based on the MTCNN network and extract similarity vectors about faces based on the Inception-Resnet model. We use CLLR to process **audio and video similarity vectors and fuse two modal information** respectively. The experiments in the Voxceleb and TIMIT datasets show that the model improves the accuracy of digital identity recognition.

🏢 Project Experience

Hospital Appointment System

- Build a website front-end based on the Vue3 framework to dynamically interact with users.
- Deploy the back-end database based on MyOracle for front-end and back-end communication.

Emotional Communication Assistant

- Perform speech emotion recognition with an accuracy of 70%.
- Android mobile terminal-server architecture, with the characteristics of dynamic image interaction, Chinese and English bilingual recognition, intelligent response generation, etc.