Mr. Peng Zhikun

Tel: 86-18756571929 || Email: zhikun.peng929@outlook.com || Website: [Zhikun Peng - Portfolio]

EDUCATION

The University of Manchester, UK   **09/2025-Present**
MSc Robotics

The University of Liverpool, UK
Xi'an Jiaotong-Liverpool University, China (2+2 study route)   **09/2021–06/2025**
B.Eng. Computer Science and Electronic Engineering (University of Liverpool, First Class Honours)

INTERNSHIP

Anhui Keye Intelligent Technology Co., Ltd.   **19/06/2025–05/09/2025**
Software Engineering Intern
- License plate recognition module: implemented and optimized a license-plate recognition module based on OpenCV using C++; responsible for plate localization, character segmentation, and character recognition.
- Lightweight LPR system development: built a real-time lightweight license-plate recognition system using YOLOv5 for plate detection and LPRNet for character recognition.
- Technical skills and teamwork: strengthened C++ and OpenCV skills, completed assigned development and debugging tasks, and collaborated effectively with colleagues and supervisors.

ALPLA (Hefei) Plastic Co., Ltd.   **19/06/2024-30/08/2024**
Assistant in the Engineering Department
- Machine maintenance: assisted in the maintenance and replacement of components to ensure the smooth operation of production machine.
- Process optimization: worked to troubleshoot and improve the efficiency of various production processes, with a focus on optimizing equipment performance and reducing.
- Technical support: participated in the diagnosis and resolution of technical problems related to production machinery to help maintain consistent production quality.

RESEARCH

MOSAIC Immersion — Web-based VR Borehole Visualization & Collaborative Platform (University Final Year Project)   **09/2024–06/2025**
- Web VR platform for immersive visualisation of geophysical borehole data and multi-user remote collaboration.
- A-Frame + Web technologies: Built cross-platform front-end (A-Frame, HTML/CSS/JavaScript) to render panoramic VR videos mapped onto a 3D video sphere and support desktop / iOS browsers without specialized VR hardware.
- Real-time synchronization: Implemented WebSocket-based server (Node.js) for real-time annotation and video-list synchronization across multiple clients, ensuring multi-user collaborative consistency.
- Annotation & comparison features: Designed time-synchronised annotation list (add/delete/jump-to-time) and dual-video synchronous switching to enable side-by-side comparison of different renderings at the same timeline.
- Point-cloud pipeline & VR video generation: Performed point-cloud optimisation (MeshLab: decimation, UV mapping, texture baking) and produced VR walkthrough videos in Unity (camera trajectory scripting, Unity Recorder) for high-quality immersive playback
- Key results: Achieved stable multi-user desktop experience with real-time synchronisation and dual-video comparison; documented limitations and proposed fixes for annotation deduplication, mobile optimisation, and 3D model fidelity improvements
- Tech stack: A-Frame, JavaScript, HTML/CSS, Node.js, WebSocket (ws), AWS EC2, Apache, Unity, MeshLab, OBJ/MTL textures, JSON for metadata

Multi-user Voice Authentication Access Control System.   **06/2024-09/2024**

- Sony Challenge 2024-Tiny Machine Learning on Sony Spresense.
- Implementation of MFCC audio processing: Deployed the audio processing method on the Spresense development board in the Arduino environment to extract the user's voice features.
- GMM model deployment: Deployed the GMM recognition feature recognition model trained by AI on the Raspberry Pi and wrote the verification program in Python to ensure the accuracy and efficiency of voiceprint recognition.
- Hardware management: Implemented audio recording, memory control, and file transfer of the Spresense development board, so that the system can efficiently record and process the user's voice data.

Voice Authentication Door Lock - Year 2 Project   **02/2024-03/2024**

- Used NeMo to identify and verify the speaker's identity, and integrated advanced deep learning models and Sony Spresense development boards to build a prototype system to identify voiceprints and control door locks.
- Responsible for Arduino programming, hardware system construction, and MCU control and application.
- Wrote reports.

EXTRACURRICULAR ACTIVITIES

Organizer and Planner, Leadership Competition of XJTLU   03/2023
Participation Award, 2021 I-Link of XJTLU   02/2022