Guiyin TIAN

Email: guiyin_tian@connect.hku.hk | Tel: 94988106

Education

The University of Hong Kong

BEng (Major: Computer Engineering)   Sep. 2022 - Jul. 2026

Relevant Courses: Computer programming I & II; Electric circuit theory; Computer Organization and Microprocessors; Computer and Communication Networks; Digital system design; Embedded machine Learning; Principles of operating systems; LLM & Deep learning(In process)

Experience

HIS Laboratory, Department of Data and Systems Engineering, HKU

Student Research Assistant   Sep. 2024 – now

- Developed an interactive VR game project using Unity 6 engine and C# scripting
- Assist with daily experimental progress, including data collection and analysis
- Maintain social media platforms and update the laboratory website based on Wix
- Host the laboratory tour and demo presentation, assist in the Common Core Course project demo day

VR/XR Developer Intern   Jun. 2024 - Sep. 2024

- Participated in the development of a VR/XR game project using Unreal Engine 5 with C++
- Developed a 6-DoF controller using Arduino TensorFlow Lite and MPU6050 sensor for motion recognition, involving sensor calibration and model training, achieved an accuracy of 98%
- Established the Communication channel between Arduino and Unreal Engine through the UDP protocol

Projects

Autonomous Mobile Robot - Pest Control and Irrigation   Sep. 2024 - Dec. 2024

- Integrated Nvidia Jetson Nano with Arduino to build a real-time object detection with an accuracy of and control system for precise pest control and irrigation, with an accuracy of 98.5%
- Implemented the voice control by integrating the Siri API, enhancing user friendliness
- Designed a water container using SolidWorks, optimizing the transportation safety

Hand Gesture recognition   April 2023 - May 2023

- Collaborated with team members to develop and train a pretrained ResNet18 model using customized dataset for hand gesture recognition, using Python, OpenCV, Pytorch, Pandas, MediaPipe
- Optimized the model with Pruning and Quantization to ensure real-time inference capabilities on Raspberry PI 4B
- Deployed the trained model on the Raspberry PI 4B and achieved an accuracy of 97.8% on the real-time hand gesture recognition task

Smart Soccer Robot   Sep. 2022 - Dec. 2022

- Design and install the robot using SolidWorks, 3D printers, and laser cutting
- Collaborated effectively with team members to determine the robot design and develop a comprehensive business plan for the project
- Created a captivating poster and video about the robot, invited by the professor to participate in the HKU 7th Engineering Inno Show

Extra-Curricular Activities

Member of HKU Astar & Herkules (formerly RoboMaster ICRA AI Challenge)

- Electronic Control Design for Infantry in RoboMaster Competition RMUL 2024
- Member of the Embedded Systems team, responsible for wiring, tuning, and collaborating with the algorithm team to integrate software and hardware, ensuring seamless communication and functionality
- Participant of RMUL (RoboMaster University League) 2024, GuangDong Station, Chongqing Station, and RMUC (RoboMaster University Championship) 2024
- Won First Prize in RMUC International Competition and Second Prize in RMUL Southwest Regional Competition

SSCC (Staff-Student Consultative Committee) student representative

- As a student representative for the SSCC, actively participating in decision-making processes and voicing student concerns
- Played a vital role in bridging the gap between students and the school administration, fostering effective communication and positive changes

Student Ambassador for HKU Information Day and Alumni Day

- Assisted in organizing and facilitating various activities, including campus tours, alumni interactions, and provided guidance and information to prospective students and alumni

Additional Information

Languages: Chinese, English
Skills: Python, C++, C#, Keil, SolidWorks, Arduino, VHDL, Unreal Engine, Unity, YOLO, MS Office