## Education

Bachelor of Science in Intelligent Manufacturing South China University of Technology, Guangzhou, China

Expected Graduation: [6, 2025]

**Grade：**

C++ Programming foundations (91/100) ,Practice of Introduction to engineering(91/100), Linear Algebra(92/100), Circuits practice(100/100), Enginneering Innovation training(95/100), Embedded system and design(99/100), Modeling,Analysis and Control of Dynamic System(87/100)

## Exchange Program

University of Pennsylvania, Philadelphia, PA, USA

Program Time:[2, 2024]

Participated in a month-long exchange program focusing on innovation, where I studied emerging trends in technology and their application in robotics and intelligent systems.

**Grade:**

Leadership ( 96.53/100), Persuasive Speaking & Writing (95/100), Innovation & Technology (88.82/100)

*- Engaged in workshops and seminars with leading researchers and industry professionals in the field of robotics and artificial intelligence, gaining insights into cutting-edge technologies and methodologies.*

*- Collaborated on a project team to develop a proposal for an innovative robotic solution addressing real-world challenges, honing skills in interdisciplinary teamwork and creative problem-solving.*

## Interest

Robotics and Automation, Digital Manufacturing, Advanced Programming (Python, C++), System Integration

## Completed Project

**Title:**

**Development of a Millimeter Wave Radar-Based Living Detection Device for Electric Vehicle Wireless Charging Safety**

**Description:**

In this innovative project, our team aimed to enhance the safety of electric vehicle (EV) wireless charging systems and mitigate the adverse effects of electromagnetic field exposure on humans and animals. （这里插一张装置的图）

Over the course of a year, we successfully developed an integrated millimeter-wave (mmWave) radar sensor board, enabling effective communication between the mmWave radar and the STM32 main control chip.（这里插入一张结题书）

Overcame the limitations of traditional detection methods (infrared sensors, ultrasonic radar, and cameras) by leveraging mmWave radar technology, which offers extensive coverage (up to 160 meters), all-weather operation, and the ability to penetrate non-metallic materials.

***Sponsorship and Affiliation:***

*Received substantial support as part of a* ***provincial-level university student innovation and entrepreneurship initiative****, affirming the project's significance and potential for societal impact.*

**Title:**

**Design and Manufacture of a Robotic Ball Collector**

The design of the vehicle is rooted in a Free Real-Time Operating System (FreeRTOS), incorporat

ing an Openmv camera module for real-time image transmission and remote control.The vehicle’s moving system is characterized using Mecanum Wheels, while the control system leverages a PS2 controller and Bluetooth technology for remote control.

The programming approach for the robot’s MCU controller is based on an RTOS (Real-Time Operating System) system, which differs from interrupt-driven control. In an RTOS, tasks are executed in a cooperative manner, where higher-priority tasks are given higher priority over lower-priority tasks.The target velocity is passed through the kinematic analysis function to obtain the actual output for each motor. Finally, the motor speed control is achieved by using a PID controller.

（插入pid.png )

Our robot achieved the second place in our college!

**Title:**

**A TinyML-based Human Activity Recognition Smart Watch**

This project aims to develop an intelligent watch based on TinyML and deep learning algorithms, focusing on efficient and accurate posture recognition, and possessing the capability to control smart devices collaboratively. TinyML technology enables the running of machine learning models on ultra-low-power microcontroller devices, allowing the smart watch to perform local data analysis and processing without relying on cloud or edge servers, thereby reducing latency, enhancing privacy protection, and security.

(插入图片)

The project have won the first prize in our chllege!

## Ongoing project

**Title:**

Development of a Multimodal Fusion Detection Device for Circuit Breaker Hydraulic Mechanism Hydraulic Oil Based on Edge Artificial Intelligence.

**Title:**

Autonomous Life-Saving Ring Deployment Robot with GPS Geofencing and Wireless Recharging Capabilities.

***Sponsorship and Affiliation:***

*These two projects are part of the Climbing Plan at South China University of Technology, showcasing the university's commitment to pioneering research and technological innovation.*

## Talk

In the initial phase of my final semester, I had the honor of delivering a lecture titled "The Common Communication Protocols in Embedded Systems" to the freshmen members of our robotics competition team, "Robot IC." My presentation covered essential protocols such as USART, IIC, and SPI. Following the theoretical part, I demonstrated practical applications, showcasing how to utilize fundamental development tools like Keil5 and CubeMX, further enriching the learning experience with a hands-on demonstration.

（这里插入图片）

## Skill

**Languages**: Fluent in English (IELT 6.0) and Mandarin

**Programming Languages:** Proficient in Python, C++, and C for embedded system development.

**Machine Learning and Deep Learning:** Experience with TinyML, neural networks, and algorithm optimization for real-time applications.

**Sensor Integration:** Skilled in integrating various sensors and actuators to create intelligent systems like designing pcb and modeling

**Teamwork style:Collaborative:** My approach to teamwork is rooted in active listening, open-mindedness, and the ability to merge diverse viewpoints into cohesive, innovative solutions.

## Rewards

TCL Corporate Scholarships (ranked 2/25 comprehensively,  ￥20000, TCL Technology)

SCUT School Scholarship (ranked 2/25 comprehensively, ￥20000, SCUT)

Third Prize of Guangdong Electronic Design Competition

National Robocon Competition Third Prize (Startup Team Member, Responsible for Electrical Control)

Sinmulink证书

嵌入式证书

2023华工年度十佳班集体成员

中国党员