

YUYAO YANG

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Experience

Engineer

10/2021 to 09/2022

LIANQIAN TECHNOLOGY CO., LTD

Xuchang, China

- **Participated in the development of the intelligent lighting control module of the "City Intelligent Lighting" project:** I used Python as the programming language. The module controlled the lighting system based on infrared camera data, meaning it identified large to medium-sized moving objects within the illuminated area (including human and vehicles), and determined whether to turn on the lights. The sub-module for controlling the duration of lighting was optimized. Additionally, improvements were made to the accuracy of classifying humans and animals. This project was promoted by the Xuchang Municipal Government.
- **Developed WeChat mini program for power field operations:** I mainly used Python and CSS as the development language for the back-end and front-end. The program digitized and displayed the basic data of the power meter on a mini-program, addressing security issues in the information exchange process and improving efficiency by over 80%.

Teacher

09/2020 to 09/2021

Qingyan English Training Centre

Xuchang, China

- **English Teaching:** Mainly responsible for one-on-one English teaching tasks. Taught English to students from Grade 7 to Grade 12 in China. Successfully improved the English grades of 4 students from failing to good and raised the grades of most other students to passing standards.
- **After-school tutoring:** Corrected students' homework and focused on reviewing knowledge points related to errors in exam papers. Successfully increased the exam scores of 1 student, enabling them to meet the standards for university entrance exams.

Education

Master of Science: Applied Artificial Intelligence

09/2022 to 09/2023

Cranfield University

Cranfield, UK

GPA: 64.9/100 (Merit)

- **Core Courses:** Data Analytics and Visualisation, Deep Learning, Search and Optimisation, Statistical Learning Methods, Logic and Automated Reasoning, Intelligent Cyber Physical Systems

Bachelor of Engineering: Software Engineering

09/2015 to 07/2019

Zhengzhou University

Zhengzhou, China

GPA: 76.81/100

- **Core Courses:** Calculus, Linear Algebra, C# Programming, C++ Programming, Data Structures, Principles and Application of Database Systems, Digital Image Processing, Software Engineering

Academic Programmes

Vehicle License Plate Recognition (College Level Innovation and Entrepreneurship Project at Zhengzhou University)

- I was primarily responsible for segmenting license plate characters captured by an optical camera.
- I used Matlab's image processing tools to perform grayscale and binarization on the photos and then segmented the characters. By comparing them with a standard character database, The program identified the most similar characters and output the corresponding character labels.
- Improved proficiency in using Matlab tools, enhanced analytical skills, and fostered a spirit of teamwork.

Marshaller Gestures Classification (Group project at Cranfield University)

- We developed a gesture recognition system capable of real-time identification of marshaller's gestures, promptly transmitting information to pilots and other departments to prevent accidents caused by gesture errors.

- I was mainly responsible for the gesture classification module. The input to this module was marshall's angle matrix identified by the upper layer module using Yolo as the detection model. I used LSTM model as a classifier to categorize the input data and output classification labels.
- I simultaneously trained RNN and random forest models. After a comprehensive comparison of accuracy, computation time, and computational resources used, LSTM was selected as the classifier for the system.
- I also participated in the system's use cases investigation and completed requirement analysis and risk analysis related to the project.

Data Fusion Versus Data Integration (Thesis at Cranfield University)

- The project designed a system capable of real-time identification of intruding unmanned aerial vehicles (UAVs). This system accurately identifies UAVs from a multitude of aircraft by fusing data from visible light camera and audio sensor.
- The system processed and analyzed input video and audio data separately, producing a video stream containing dynamically identified frames. In the video stream, the system annotated the classification results of flying objects in the spatial domain of the video and provided confidence score annotations to reflect the system's confidence in its classifications.
- The methods employed by the system include the use of YOLOv8n model and a CNN model with ResNet structure. The system incorporates an attention mechanism as its AI module to identify and classify video and audio data. It merged classification results based on confidence score comparisons to output the final decision result.

Skills

- **Languages:** Chinese (native), English (fluent)
- **Skills:** Data Collection, Python, C++, C#, Digital Image Processing, Machine Learning, Deep Learning, PyTorch, Matlab, Systems Development