

ZHICHAO JIANG

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EDUCATION

Nanyang Technological University, Singapore Aug.2021-Jun.2022(expected)

Masters in Computer Control and Automation, School of Electrical and Electronic Engineering

- Relevant Courses: Machine Vision, Computer Control, Video Signal Processing, Neural and Fuzzy Systems

East China University of Technology, China Sep.2017-Jun.2021

Bachelor in Electronic Information Engineering, GPA: 3.7/4.0, Rank: 2/84

- Relevant Courses: Sensors and Testing Technology (97), High-Frequency Electronic Circuits (95), Electronic Systems Design (99), Principles of Automatic Control (94), Embedded Systems Design (98)

PUBLICATION

G. Liu, **Z. Jiang** and Q. Wang, "Analysis of Gas Leakage Early Warning System Based on Kalman Filter and Optimized BP Neural Network," in IEEE Access 2020, doi: 10.1109/ACCESS.2020.3026096.

RESEARCH EXPERIENCE

Dynamic Route Guidance Arithmetic Based on Deep Learning Aug 2021-Now

Supported by Cyber Physical Intelligent System Research Group at NTU, supervised by Dr. Rong Su

- Build a simulation traffic network in an open-source simulator SUMO with extracted features from dynamic traffic flow; gather traffic data from the platform using Python API TraCI
- Apply Deep Q-Learning to optimal route guidance, find the best route and avoid congestions in a complex road network

An evaluation of Random Vector Functional Link neural network Sep 2021-Nov 2021

- Employed 11 UCI datasets which contained 2 classes datasets and multiple classes datasets.
- Evaluated the performance of different closed-form solutions and activation functions, using Friedman test and student's t-test statistical methods.

Design and Implementation of Inspection System for Electrical Equipment based on the unmanned aerial vehicle (UAV) Dec 2020-May 2021

- Built a UAV hardware platform with remote UAV status information and inspection images
- Constructed an electrical equipment inspection software interface using QT, Python, and OpenCV libraries
- Applied YOLO to do target recognition for the system
- Tested UAV obstacle avoidance methods using the Gazebo simulation platform
- Analyzed the changes of altitude angle using MATLAB based on the data recorded in the flight log to evaluate the flight stability

Beidou Navigation and UAV Based Forest Fire Real-time Warning Platform Jan 2020 -May 2020

- Designed the hardware of the platform, including microcontroller programming, sensors selection, and components assembling
- Implemented a fire detection method based on the UAV platform and improved the efficiency of fire monitoring

Gas Leakage Warning System Analysis April 2019-Sep 2020

- Implemented a method to detect gas leaks; designed and assembled the hardware framework
- Programmed the microcontroller and simulated the circuit of the warning system using a professional circuit design software, and validated the feasibility of the system

- Published a circuit structure of a gas-meter controlled gas safety emergency device patent based on the research

WORK EXPERIENCE

Research Assistant HUST-Wuxi Research Institute

Jul 2019-Aug 2019

- Participated in the warehouse system development research
- Developed XML communication interface and WebAPI communication interface based on the XML communication protocol and Webservice communication protocol
- Finished communication interface tests based on a given dataset using MySQL and C#

SELECTED AWARDS

- National Scholarship, Ministry of Education of China (Top 0.5%) 2020
- Special Scholarship, East China University of Technology (Top 1%) 2020
- First-class Scholarship, East China University of Technology (Top 2%) 2019
- First Prize, East China region in BeiDou-Cup China Science and Technology Invention Contest 2020
- First Prize, the 16th College Student Science and Technology Innovation Fund Project Competition 2019
- “Outstanding Student” Award, East China University of Technology 2018,2019

SKILLS

Programming Languages: MATLAB, Python, C/C++, HTML/CSS

Tools and Frameworks: L^AT_EX, PyTorch, Gazebo