

LI ZHANG

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EDUCATIONAL BACKGROUND

Master	City University of Hong Kong <ul style="list-style-type: none">• Major: Electronic information Engineering (distinction)• Relevant coursework: Linear Systems Theory and Design, Multi-Dimensional Data Modeling and its Applications (Data mining), Complex Networks: Modeling, Dynamics and Control, Fundamentals of Radio Frequency (RF) Circuit Engineering, Detection and Estimation- Theory and Applications in Communications, Topics in Security Technology	Sep 2020- Oct 2021 GPA: 3.67/4.3 (ranking:3/94)
Bachelor	Hefei University of Technology <ul style="list-style-type: none">• Major: Automation• Relevant coursework: Linear Algebra (94/100), Probability Theory & Mathematical Statistics (97/100), Complex Function and Integral Transformation, Principles of Automatic Control ,Machine learning, Data Communications and Networking, Sensor and Detection Technology, Motion Control System, Electrical and PLC Control , Numerical Analysis, Computer Control Technology	Sep 2016- Jun 2020 GPA: 82/100 (ranking:46/149)

Awards and Patents

Academic Progress Award of Hefei University of Technology in 2018

Individual Scholarship of Hefei University of Technology in 2017

An Intelligent Anti-theft Device based on Face Recognition (Utility Model Patent) in 2017

RESEARCH EXPERIENCE

A Computation-aware Motion Planning and Control Architecture with Event-triggered MPC for Autonomous Vehicles (Master Thesis)	Dec 2020-Aug 2021
Supervisor: Dr. Ehsan Nekouei	Assessor: Prof. Jie Chen

- An overtaking control architecture for overtaking is developed for autonomous vehicles using Model Predictive Control (MPC). The proposed architecture is comprised of three components: a motion planning, MPC controller and a low-level controller.
- In order to reduce the computational cost of motion planning, we also proposed an event-triggered MPC. Two different methods of motion planning methods are proposed: the A* method and the jerk minimization method. And the performance of the proposed architecture is investigated on the dry and icy road conditions
- The event-trigger MPC can save up to 50% computation cost compared with a periodic MPC. In addition, it is shown the event-trigger MPC can still control autonomous vehicles on icy roads.

Herbicide Spraying Algorithm based on Pattern Recognition for Spraying Drones	Jun 2018-May 2019
Supervisor: Dr. Qi Tan	

- Herbicides are now used in large quantities. In this study, the precise spraying of the herbicides was achieved by identifying weeds in the grains in order to save herbicide consumption and reduce pollution.
- Use SVM to identify, segment and locate weeds with a grass recognition rate of 88.3%
- The optimization algorithm is implement on the herbicide spraying drones and can save 60% of the herbicide spraying, contributing to saving resources and protecting the environment.

Classified Predictive Model Based on Low-density Separation	Nov 2019-May 2020
Supervisor: Prof. Mingguang Shi	

- In this dissertation, patients' information were used to predict the prognosis of colorectal cancer.
- Low-density separation, a part of Semi-Supervised SVM, is used to predict whether patients with colorectal cancer will metastasize and relapse, providing the possibility of individualized treatment of colorectal cancer patients.

WORKING EXPERIENCE

BYD Co. Ltd.

Planning and Control Algorithm Engineer

July 2022 - Present

- Develop and implement path planning and control algorithms for an automated system in APA(Automated Parking Assistant) and AVP (Automated Valet Parking) Scenario for our own EVs. In order to fit into mass production requirements and to consider the cost of consumer purchase, our planning and control algorithms are more suited to running on low performance embedded in-vehicle computing platforms rather than high performance computers
- Experiment on the company's own EVs and prepare to bring the results to market and consumers with colleagues

Changsha Intelligent Driving Institute Ltd.

Oct 2021 - May 2022

Automatic Driving Control Algorithm Engineer (internship)

- Develop and implement control algorithms for an automated driving system especially in autonomous bus
- Work with algorithm experts in the field of sensing, positioning and control to prototype autonomous cars and build intelligent, robust driverless systems

Siemens Ltd. China

Jul 2019-Aug 2019

Research Scientist for Automation Engineering Software (internship)

- Mainly responsible for programming Siemens PLC programs and researching industrial control algorithms
- Responsible for the communication and coordination of the Chinese and foreign teams

ADDITIONAL SKILLS

Professional Skills: C/C++; Python; MATLAB/Simulink; ROS; Fundamentals of SLAM; Kalman Filter; PLC

REFERENCE

Dr. Ehsan Nekouei (master thesis supervisor)

Assistant Professor, Department of Electrical Engineering

City University of Hong Kong

Hong Kong

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Dr. Mingguang Shi

Associate Professor, School of Electrical Engineering and Automation

Hefei University of Technology

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