

# ZHAOTING LI

BEng in Automation Engineering, Harbin Institute of Technology (HIT), China

Website: <https://hitleo.github.io/> Phone: (+86)18846457104 Email: [zhaoting\\_li@outlook.com](mailto:zhaoting_li@outlook.com)

## Educations

**Harbin Institute of Technology (HIT)**

Harbin, China

Bachelor of Engineering (Automation), Department of Aeronautics

Sept 2016—present

**GPA: 95.65** / 100

**Ranking: 2** /111

**University of California, Berkeley**

Berkeley, USA

Visiting student researcher at Mechanical Systems Control Lab

July 2019—Sept 2019

## Publications

- Yipeng Yang, Zhan LI, **Zhaoting LI**, An Automatic Laser Scanning System for Objects with Unknown Model, accepted by 2019 IEEE Smart World Congress
- Zhan LI, **Zhaoting LI**, Yipeng Yang, A Trajectory Planning Method for Robot Scanning System Using Mask R-CNN for Scanning Objects with Unknown Model, under writing, Nuro Computing (planned)

## Research Experiences

**A sample-based trajectory planning method for urban autonomous vehicles**

July 2019—Sept 2019

Advisor: Prof. Masayoshi Tomizuka, Department of Mechanical Engineering, UC Berkeley

- Applied the discrete elastic-band-based motion planning method(EB planner) to generate piecewise linear collision-free path with dynamic programming. Employed pure pursuit controller to smooth this path.
- Used a spatial and speed sampling method together with a cascaded ranking method to optimize the trajectory with many hierarchical features.
- Applied a non-conservatively defensive strategy to avoid overreacting to threats with low probability.
- Tested this trajectory planning method on a real autonomous car in a roundabout scenario.

**Path planning for a laser scanning robot system**

Feb 2019—June 2019

Advisor: Lecturer Zhan Li, Prof. Huijun Gao, Research Institute of intelligent control and systems, Department of Automation, HIT

- Designed an automatic and low-cost robot scanning system consisting of a kinect camera, a UR 10 robot and a line laser scanner. Also unified the coordinate systems.
- Proposed an online correction methods based on follow-up control and scanned data to optimize the pose of the laser scanner.
- Proposed a novel path planning methods for laser scanning based on the least square fitting and online correction. This path planning method has been validated in many use cases under various work conditions.

## **Intelligent control of robotic arm based on guided policy search method**

Sept 2018—Jan 2019

Advisor: Lecturer Zhan Li, Prof. Huijun Gao, Research Institute of intelligent control and systems, Department of Automation, HIT

- Employed the linear-quadratic-Gaussian regulator (LQG) to make the UR10 robot arm move to a designated position.
- Modified the guided policy search method (a policy search method in reinforcement learning) in executing simulated robotic manipulation tasks.
- Used position control with guided policy search method to train the UR10 robot arm move to a designated position without using inverse kinematics

## **Smart car system running on tracks**

Oct 2017—Aug 2018

Advisor: Prof. Huo Ju, School of Electrical Engineering & Automation, HIT

- Developed an intelligent car with electromagnetic sensors and wireless charging device. Applied a PID controller and fuzzy controller in the steering direction control to make the car run on tracks at a high speed.
- Designed a novel self-calibrated electromagnetic signal receiving board. Also applied Matlab to fit the sensor data to make it proportional to the actual position deviation.
- Won the second prize in the 13<sup>th</sup> Chinese national NXP CUP smart car competition.

## **Awards and Honors**

Top Ten Learning Stars at Harbin Institute of Technology (Top 1%, 10/3975)	2019
The national second prize in the NXP CUP intelligent car competition (China)	2018
University-level excellent student cadre (Top 10%)	2018
National Scholarship (Top 2%, 8/500)	2018
National Scholarship (Top 2%, 8/500)	2017
First class people's scholarship (Four consecutive times, Top 5%)	2017-2019

## **Skills**

Application: Robot Operating System (ROS); SOLIDWORKS; Altium Designer; IAR Embedded Workbench  
Programming: C; C++; Python; MATLAB

## **Volunteer Work**

Peer support, Department of Aeronautics	Sept 2016—present
<ul style="list-style-type: none"><li>• Guided students with learning difficulties to study</li><li>• Did lectures on the summary of the final exam knowledge points</li></ul>	
Cloud Classroom, Transmit Childhood Education	Mar 2017—June 2017
<ul style="list-style-type: none"><li>• Delivered ten science classes for fifth graders</li><li>• Given elementary school students a vivid and interesting explanation of physics, chemistry, robotics, aerospace and other knowledge</li></ul>	
"Internet +" distance support education, Department of Basic Education ( HIT )	Sept 2016—Dec 2016
<ul style="list-style-type: none"><li>• Tutored high school students in math</li></ul>	