# XINZHUO LI

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## EDUCATION

**Beijing Jiaotong University and Lancaster University** Sep. 2018 – Sep. 2023
(China-Foreign Cooperation in Running Schools)

**Major in Computer Science**

- GPA 3.53/4.0 (85.8/100.0)

## WORK EXPERIENCE

**CUHK(shenzhen) Robotics & AI Lab** Apr. 2021 – Feb. 2022
**Research intern during one-year gap from University** Shenzhen, China

- Mastering operations on Linux and ROS, better understanding of firmware (STM32).
- Manipulation of various robots in the lab such as four-legged robot and quad-copter.
- Implementing SLAM system on mobile robot with stereo camera and LiDAR.
- Cooperate with Huawei Corp to develop an AGV.

## RESEARCH PROJECT

**Airsbot - mobile robot using SLAM with indoor and outdoor versions** Sep. 2021
CUHK(shenzhen) Robotics & AI Lab (Supervised by Hung-Chyun Chou)
*MCU (STM32): control motors and other devices, read sensors' data to calculate odometry and communicate with host computer using RS232. Host computer: read data from stereo camera and LiDAR, based on ROS to implement mapping and navigation and communicate with remote application using ModbusTCP.*

**A Sequence-Based VPR Technique with Segmented Database and Compact Sequence List** Jan. 2022
CUHK(shenzhen) Robotics & AI Lab (Supervised by Hung-Chyun Chou)
*VPR can be considered as an image retrieval problem which can help the loop closure step in SLAM. In this paper, I use CoHog as descriptors for images to calculate similarity to segment database and generate shorter query list to reduce searching time.*

**Design of Modular Self-reconfigurable Robots with a novel actuating mechanism** Dec. 2019
Beijing Jiaotong University (Supervised by Hang Zhou)
*Design and implement a modular self-reconfigurable robot with novel actuating and docking system.*

**Utilizing PID algorithm to control a four-legged robot maintain balance on unstable platform** May. 2021
CUHK(shenzhen) Robotics & AI Lab (Supervised by Shusheng Ye)
*Implement self-balancing code on Arduino for a four-legged robot on unstable platform using PID.*

**Using UDP protocol to control swarm of quad-copters** Aug. 2021
CUHK(shenzhen) Robotics & AI Lab (Supervised by Puyang Zhang)
*Send separate command on a simple GUI to group of quad-copters simultaneously with the help of socket communication.*

## HONOR AND AWARD

**College Students Innovation and Entrepreneurship Competition, Pronvince level project** Sep. 2020
Leader of the team. Awarded for the Self-reconfigurable Robot project.

## SKILLS

**Languages**: English (IELTS 7.0), Chinese (Native)
**Programming**: Python (NumPy,Matplotlib,Pandas,tensorflow,pytorch), C & C++, Java,C#
**Robotics**: Linux, ROS, MCU (STM32), 3D modeling (solidworks)
**Other**: Git, Latex, Markdown