**Personal Info**

**Qizhi Guo**

DOB: 09/04/1999

SEX: male

EMAIL: guoqz@connect.hku.hk

**Education Background**

* Major: Mechanical Engineering
* College: College of Engineering
* Laboratory: [HKU MaRS Lab](https://mars.hku.hk/)
* GPA: In progress

**The University of Hong Kong**

**09/2021-08/2022**

* Major: Mechanical and Electronic Engineering
* College: College of Engineering
* GPA: 79% (IELTS: 6.5)

**China Agricultural University**

**09/2017-06/2021**

**Professional Skills**

**Software:**

* C / C++ / Python / MATLAB (Simulink)
* Linux Operation System
* CMake / Git / Robotic Operation System (ROS)
* SolidWorks / AutoCAD / Edgecam

**Hardware:**

* Embedded Systems Development (STM32F103, STC89C51)
* Mechanical structural design

**Academic Experiences**

**A Fast, Robust LiDAR-Inertial-Visual Fusion SLAM Framework 09/2021-02/2022**

* One of the contributors to the paper
* Design handheld platform to collect synchronized dataset (including LiDAR point cloud, image and IMU)
* Generate RGB-colored, dense and accurate point cloud
* Efficiency analysis of the modules of each subsystem

**The Integration Between FAST-LIO and Vision Based On UAV DJI M300 09/2021-12/2021**

* Time synchronization between Livox LiDAR Avia and industrial camera by PPS signals from OSDK port
* Intrinsic calibration of the camera, extrinsic calibration between LiDAR and camera
* Use SolidWorks to draw a connector to carry devices on the drone
* Handle DJI Onboard SDK based on ROS

**TurtleBot with Automatic Mapping, Localization and Obstacle Avoidance Based on ROS 09/2021-12/2021**

* Build 2D grid map using encoder and RPLiDAR-A2
* Develop localization method GMapping for the mobile robot
* Use DWA and self-designed algorithm for planner to reach the destination without colliding with obstacles
* Build the digital twin of the environment using a mobile robot, and display the camera view in real-time

**Vision-Based Navigation Control System Design For Autonomous Trolleys in Greenhouses 11/2020-06/2021**

* Control system hardware design
* Path recognition algorithm: morphological processing and finding the centerline of a profile
* Software system design for the control of the trolley by means of differential speed

**MCM/ICM contest**  **02/2020**

Topic: Construction of environmental safety assessment system based on discrete regression model under the background of plastic pollution

* Serve as the team leader in charge of the control of the progress
* Establish the safety assessment system of plastic pollution based on discrete regression model
* Utilize the gray model to predict the future development trend of disposable plastic products
* Write paper and thesis drawings

**Awards**

* 2017-2018 CAU Scholarship
* 2018-2019 CAU Scholarship