Chang-Qi, Justin Zhang

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Education

National Taipei University of Technology *Taipei, Taiwan*

M.S ELECTRONIC ENGINEERING *Jun. 2020*

- Graduate thesis: Chang-Qi Zhang and Lih-Jen Kau, Point-cloud based Dynamic Object Detection and Tracking for Autonomous Vehicles, 2020.

Skill

Languages	C, C++, Python, Java, Javascript, HTML, MySQL, Verilog
Frameworks	ROS, TesorFlow, OpevCV, PCL, CMake, Qt, Vue.js, Django, Electron, RTOS, Mbed OS

Experience

National Taipei University of Technology *Taipei, Taiwan*

RESEARCH AND DEVELOPMENT ENGINEER *Jun. 2020 – Present*

- Contribute core features across the entire AMR system.
- Object tracking system using camera and 3D LiDar information to detect and track obstacles.
- SLAM system enables robots to localize in both indoor and outdoor environments.
- Robot power management circuit design.
- A vehicle control system connects ROS to motors communication through CAN-BUS network.
- Lead firmware development, creating robot's peripheral by STM32 MCU.
- Robots Backend management system.
- Frontend development for robots' control dashboard.

Massachusetts Institute of Technology *Cambridge, MA, USA*

RESEARCH ASSISTANT *Feb.2017–Jan.2018*

- Integrated mapping, localization on, routing, and path planning modules for a lightweight autonomous vehicle (LAV).
- Created a new HMI component for obstacle visualization by projecting animation on the ground.
- Implemented Web APP for users calling the vehicle.
- Set up and config sensors on a vehicle, including motors LIDARs, IMU, and encoders.
- Created control interface between ROS and motor controllers for LAV.

Projects

Campus Rover An autonomous mobile robot for campus delivery.

Charging Rover An autonomous mobile robot for E-scooter charging service.

Persuasive Electric Vehicle (PEV) A light-weight autonomous tricycle cooperated with MIT Media Lab.

CityHD Digital 3D bricks for urban planning challenges.

TorqueBot Autonomous platform for educational and service design applications.

Driver Alert System A embedded system that is able to notify dangerous turn.

MES A manufacturing execution systems enables company to mange and track production status.

Disinfect Map A web service enables students to track the disinfection status of classrooms.