Chao-Chun 'Leo' Hsu

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Education

B.S. in Electrical and Computer Engineering,

National Chiao Tung University (NCTU), Taiwan.   09, 2016 ~ present

Research Interests

Robotics, Mechanical design, Automatic Control Systems, Deep Learning, Marine Robotics

Projects

- **Maritime RobotX Challenge:**

    I was one of the member of Team NCTU, represented our University to participate the biggest maritime robotics competition in the world. We put   camera, LiDAR, GPS, IMU…etc on a Wave Adaptive Modular Vessel(WAMV) to detect the working environments, with powering, propulsions, sensing, computation units and both deep learning and traditional algorithms, we could make some correspond actions to accomplish tasks in RobotX Challenge. Finally, we've won fifth place of 2018 RobotX Challenge in Hawaii. We're also planning to improve our performance in later related competitions, such like 2019 Virtual RobotX Competition(VRX) and 2020 RobotX Challenge…etc.

- **Duckiepond:**

    Originally, Duckiepond is our subproject of RobotX Challenge inspired by Duckietown(project of MIT). We built a small version of self-driving boat only using single Raspberry Pi board and Arduino UNO, pi-camera, GPS and IMU and two thrusters, which has cost down significantly, we called it 'Duckieboat'. Our goal is to build a platform for people who are interested in marine robotics or machine learning, can learn related knowledge easily. Duckieboat also can have other applications, such as scientific research, aquatic human rescue, water environment maintenance…etc with some hardware upgrades. Duckiepond project is going to be part of The Duckietown Foundation. My main role in this project is hardware design.

Relevant Coursework

Automatic Control Systems, Object-Oriented Programming, JAVA Programming, Digital Signal Processing, Data Structure.

Technical Skills

- **Programming:** C/C++, JAVA, Python, MATLAB.
- **Middleware and Libraries:** Robotic Operating System(ROS), OpenCV, Arduino.
- **Sensors and Hardware:** Raspberry pi 3, Depth camera(ZED mini), NVIDIA Jetson TX2.
- **Others:** 3D printing and modeling, Solidworks, SketchUp, Gazebo.

Working Experience

Working at eTreego Co. since 2016. Responsible for hardware design and assembly of electric charging stations, software design of Tire Pressure Monitoring System(TPMS).

Leaderships

- Captain of Electrical and Computer Engineering Tennis Team   09, 2017 ~ 07, 2018