Pin-Wei 'David' Chen

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Education:

M.S. in Institute of Electrical Control Engineering,
National Chiao Tung University (NCTU)**,** Taiwan. 2018~present
B.S. in Electrical and Computer Engineering (ECE),
National Chiao Tung University (NCTU), Taiwan. 09/2014~06/2018

Research Interests:

Robotic Vision、Automatic Control System、3D perception、Deep Learning

Related Courses:

Sensing and Intelligent Systems (A+), Automatic Control Systems (A+), Object-Oriented Programming (A+), Creative Software Project-Autonomous Vehicle(A+), Robotics (A)

Professional Skills:

Programming: C/C++, Python, Matlab, JAVA
Middleware and Libraries: Robotic Operating System (ROS), OpenCV, PCL (Point Cloud Library)
Deep Learning Framework: Caffe, Pytorch, Tensorflow
Sensors and Hardware: LIDAR (Velodyne 32/16E), Depth Camera (RealSense SR300, ZED)
Simulation: Gazebo

Research Projects and Professional Experience:

2018 RobotX Competition

RobotX is a global maritime self-driving robot competition, I severed as the 3D perception leader of the team NCTU. I use 3D LIDAR point cloud to do some preprocessing such as clustering, filtering, projection, and then classify point cloud of each object by using deep neural network.

Duckietown: A Platform for Autonomy Research and Education

- **A short introduction for duckietown**

Duckietown is a robotic research and education platform developed in MIT in 2016. There are many branches in the world, such as in Eidgenössische Technische Hochschule Zürich (ETHZ), Toyota Technological Institute at Chicago (TTIC), Université de Montréal (UdeM) and National Chiao Tung University (NCTU). The course number of the ETHZ course is 151-0323-00L Autonomous Mobility on Demand: From Car to Fleet. More information please see duckietown.org

- **Teaching Assistant in Duckietown @ NCTU, Taiwan**
  I serve as a teaching assistant in the NCTU branch, and design several course modules and experiment using ROS (Robot Operating System), Python, OpenCV, Arduino. I also lead a project teams working on Gazebo, a simulator for ROS.

- **Lecturer in Duckietown Summer School, Duckietown Summer School 2017 (Summer 2017)(English lecture)**
  Duckietown Summer School is a course to train potential instructors and teaching assistant. The official website: http://duckietown.nctu.edu.tw/summer_school.html.

Multi-robot Patrolling System

We realize that robot can help us with something routine and cycling, just like patrolling, which we should patrol lots of nodes again and again. As a result, I come up with this idea, trying to build a multi-robot patrolling system using ROS. This is a potential and practical project, it can apply to surveillance & security, and production line delivery.

3D Object Modeling

Nowadays, people are using 3D information more often to do their work than 2D information. As a result, I use PCL, ICP, iSAM to build a 3D point cloud model.

Working & Teaching Experience:

Teaching Assistant, Robotic Vision (Spring 2018), Creative Software Project (Fall 2017), Department of Electrical and Computer Engineering, NCTU, Taiwan

Leaderships:

Captain of Kaohsiung Senior High School Basketball Team (2013~2014)
Administrative Assistant of Student Association of Department of Electrical and Computer Engineering (2016~2017)
Captain of Electrical and Computer Engineering Basketball Team (2016~2017)

Co-founder and Leader of National Chiao Tung University Calligraphy Club (2016~2017)

2018 RobotX 3D Perception Leader of Team NCTU (2018)