

Chang Yu-Hsien

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EDUCATION

National Chiao Tung University

Hsinchu, Taiwan

M.S. Electrical and Control Engineering

2016.09~2019.6

- Intelligent System Control Integration Laboratory
- **Thesis:** Robot Bin-Picking Based on Deep Learning and 3D Pose Estimation
- **Relevant Coursework:** Embedded Operating System, Robotic Vision, Computer Vision, Robotics

National Chung Cheng University

Chiayi, Taiwan

B.S. Electrical Engineering

2012.09-2016.06

Elite Program

2012.09-2015.05

- **Grade:** Average: 86.83 (GPA 4.22)
 - **Academic Excellence Awards:** 1st Semester of Freshman Year, 2nd Semester of Junior Year
 - **Project:** Tri-wheel Stair Climbing Robot
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EXPERIENCE

Development of a 3D Environment Perception and Object Pose Estimation Module Based on ROS Architecture (2017.06~2019.06)

- The project is supported by the Ministry of Science and Technology of Taiwan R.O.C. This work is to develop a 3D vision module for environment perception and object pose estimation. My contribution is the development of the Random Bin-Picking System Based on Deep Learning and 3D Pose Estimation. The design increased the efficiency of 3D pose estimation and reduce the cycle time of bin-picking task.

Principle of Microcomputer in National Chiao Tung University (2017.09~2018.01)

- Teaching Assistant

Intelligent Robotic Control Labs Using KNRm with C Language (2016.09~2017.06)

- Teaching Material Developer

Develop the Labs material for KNRm Robotic Controller: Introduction of IDE, Hardware of KNRm and Design the Chapter for Image Processing of Robot

Elite Program at National Chung Cheng University (2013.04~2013.06)

- Counselor

Served as an activity advisor, inherited working experience to juniors and supported them to handle the programs.

Lecture of Elite Program at National Chung Cheng University (2013.04~2013.06)

- General Coordinator

19th EE Camp at National Chung Cheng University (2013.04~2013.07)

- Course Lecturer

Enhanced the ability of lecture preparation and expression during the camp preparation. Served as a C Language course lecturer in the camp.

TECHNICAL SKILL

- 3D Vision, Object Pose Estimation, Random Bin-Picking
- Image Segmentation, Deep Learning
- C/C++
- Familiar with Linux, Robot Operating System (ROS) 、github
- Point Cloud Library

SELECTED PROJECT

PXA-Bot (February 2017 – June 2017) *C*

This is the final project of Embedded Operating System course in Institute of Electrical and Control Engineering in National Chiao Tung University. We simulate a sweeping robot through algorithm. In the system we implement Map Segmentation to reduce the usage of memories and make map blocks overlap in order to simplify the condition of boundary checking.

Tri-wheel Stair Climbing Robot (March 2015 – August 2015) *Python*

This is the senior project of Electrical Engineering Department in National Chung Cheng University. We construct a stair climbing robot. The mechanism of climbing stairs through rotating wheel shelves is designed. This design can reduce the damage when robot climbs stairs. The components are printed by 3D printer and Dynamixel Smart Servo motors are used for control. The algorithm is written in Python.

Keyboard connects with 8051 (September 2014 – January 2015) *Assembly*

This is the final project of Microcomputer course of Electrical Engineering Department in National Chung Cheng University. Design Assembly Language program to connect PS/2 keyboard with 8051 development board. User can input characters and symbols to 8051 and the output is shown on the LCD

module.

Functions: 26 English characters, 21 symbols, Numbers, Caps Lock, Shift, Backspace, Delete, Home, End, Arrow Key, Automatic Line Feed.
