

Chang-Yi Kuo

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Education:

B.S. in Opto-mechatronics, Department of Mechanical Engineering,
National Central University (NCU), Taiwan. 09/2012-06/2016

The Affiliated High School of National Chung Hsing University.
09/2009-06/2012

Research Interests:

Robotic Vision 、 Embedded System 、 Automatic Control System

Selected Courses:

Automatic Control System: Linear systems 、 System Dynamics (A+)

Embedded System & Mechatronics: Micro-Controller 、 Robotics 、 Mechatronics
(A) 、 Electromagnetic and Electromechanical Machines (A+) 、 Sensing Principles
(A+) 、 Automatic Optical Inspection (A+)

Research Experience:

Project: Controlling & Realization of a Self-balancing, two-wheeled, electric vehicle

Our main purpose of this project is to design a two-wheeled, electric vehicle which has the ability of self-balancing, and analyze the result by adjusting the parameters of PID rule.

In this project, we use the micro-controller (ATMEL 80S51), related hardware and sensors to design our device. When turning on the battery, the Gyro and the Accelerometer keep detecting the position continuously, and then we can receive the data of vehicle's pitch angle processing by the sensors. After the major controller computes those data, we modify the parameters of PID rule step by step and control the electric motors via transmitting the PWM signals. So, it drives its two wheels forward or backward as proper feedback to return its pitch to upright and the vehicle will maintain balance by itself.

Dynamic Control laboratory Advisor: Prof. Tung, Pi-Cheng 03/2015-09/2015

Programming languages:

C/C++ 、 Matlab 、 LabVIEW