

ChaoLiu

Robotics Researcher

contact education

3921 Pine St, Apt. 2F
Philadelphia, PA 19104
USA

+1 (215) 350 6662

chao.liu0307@gmail.com
seas.upenn.edu/~chaoliu
ModLab://ChaoLiu
Linkedin://ChaoLiu

Sept, 12'–May, 14'

Master of Science in Engineering in Robotics
School of Engineering & Applied Science, University of Pennsylvania
Research Assistant at ModLab in GRASP Laboratory
Teaching Assistant for Design of Mechatronics Systems(MEAM 510)

3.61/4.00

Sept, 08'–June, 12'

Bachelor of Science in Mechanical Engineering and Automation
School of Mechanical Engineering, Dalian Jiaotong University
Specialization in Mechatronics, minor in Business Administration

89.5/100

projects

languages

Chinese(native)
English(professional)

Mar, 14'–Apr, 14'

Localizetion and Mapping

Simultaneous Localization and Mapping

- Mapped an indoor environment by an IMU and a LIDAR on a mobile robot;
- Constructed the 2D map using a particle filter and occupancy grid algorithm.

courses

Learning in Robotics,
Machine Learning,
Digital Signal
Processing,
Embedded System,
Control,
Mechatronics

Nov, 13'–Dec, 13'

PhanToM Robot Control System(Our Own Myo)

Mechatronics and Machine Learning

- Controlled muscle sensors(EMG) and an IMU to measure the muscle activation and motion, and output some control commands to a robot and a quadrotor;
- Designed a vehicle robot with Omni-wheels and holonomic control;
- Designed a board with an IMU, an xBee and a PID controller for a quadrotor.

Nov, 13'–Dec, 13'

Yelp Rating Prediction

Machine Learning

- Processed the data with NLP methods to classify the words;
- Used Naive Bayes, SVM and our own kernel to train the data and got a model.

strengths

Embedded System,
C/C++, Python, Matlab,
Control, Motor,
PCB, Eagle, Altium,
SolidWorks

July, 13'–Aug, 13'

Persona Robot

Mechatronics and Control

- Designed a force sensor with IR and phototransistors and made the PCB;
- Designed a servo controller to control the servos for the tablet motion;
- Designed PID controllers for the base motion and mast rotation with encoders.

Feb, 13'–Mar, 13'

M4 Peripheral Design -- mTouch

Embedded System

- Used FT5306 as the capacitive touchscreen controller and designed the interface PCB and code for the STM32F373(Cortex-M4) via IIC.

Dec, 12'–June, 13'

Low-cost Laser Range Finder

Embedded System

- Simulated SCCB protocol on STM32F373 and configured a camera(OV7670) in RGB RAW mode;
- Designed the PCB including the microcontroller, the camera and the laser;
- Transmitted the data to the master via SPI.

Nov, 12'–Dec, 12'

Robockey

Mechatronics

- Designed 3 robots to compete in Hockey games;
- Localized the robots with Wii cameras and applied wireless communication;
- Designed PD controller to find the puck and move to the goal;
- Controlled the solenoid to kick the puck;

working experiences and organizations

Oct, 12'–Now

Research Assistant at ModLab in GRASP Laboratory

Aug, 13'–Dec, 13'

Teaching Assistant for Design of Mechatronics Systems (MEAM 510)