

ChaoLiu

Robotics Researcher

contact education

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

Sept '12 - May '14

Master of Science in Engineering in Robotics
School of Engineering & Applied Science, University of Pennsylvania

3.61/4.00

+1 (215) 350 6662

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

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Linkedin://ChaoLiu

ModLab://ChaoLiu

GitHub://ChaoLiu

projects

languages

Chinese (native)

English (professional)

courses

Learning in Robotics,

Machine Learning,

Digital Signal Processing,

Embedded Systems,

Control,

Mechatronics

Mar '14 - Apr '14

Localization and Mapping(SLAM)

Robotics and Machine Learning

- Leveraged mobile-robot-mounted IMU and LIDAR to map indoor environment;
- Constructed 2D map using a particle filter and occupancy grid algorithm.

Nov '13 - Dec '13

PhanToM Robot Control System(Our Own Myo)

Mechatronics and Machine Learning

- Designed wearable device using IMU and EMG(read muscle signals) to measure muscle activation and motion to control robots;
- Designed mobile robot with Omni-wheels and holonomic control;
- Designed board with IMU, xBee and low-level PID controller for a quadrotor.

strengths

Embedded Systems,

PCB (Eagle, Altium),

CAD (SolidWorks, Pro/E),

C/C++, Python, Matlab,

Control, Motors,

Git, SVN

July '13 - Aug '13

Persona Robot

Mechatronics and Control

- Designed infrared-based force sensor and associated PCB;
- Implemented servo controller for tablet-driven motor;
- Designed PID controllers for base motion and mast rotation.

Feb '13 - Mar '13

M4 Peripheral Design -- mTouch

Embedded Systems

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

Dec '12 - June '13

Low-cost Laser Range Finder

Embedded Systems

- Simulated SCCB protocol on STM32F373(Cortex-M4) and configured the camera(OV7670) in Raw RGB mode with VGA resolution;
- Designed the PCB including microcontroller, camera and laser;
- Transmitted the data to the master via SPI.

Nov '12 - Dec '12

Robockey

Mechatronics

- Competed in 3-on-3 hockey played by fully-autonomous robots;
- Localized robots with infrared cameras and applied wireless communication;
- Designed PD controller for motor and integrated solenoid for "shooting";

working experiences and organizations

Oct '12 - Now

Research Assistant in ModLab (UPenn GRASP Laboratory)

Robotics

Focus on Embedded Systems Design and Control

Aug '13 - Dec '13

Teaching Assistant for Design of Mechatronics Systems (MEAM 510)

Mechatronics