Haowen Shi

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Carnegie Mellon University

B.S. Electrical And Computer Engineering, with Additional Major in Robotics, Class of 2019

Cumulative GPA: 3.73/4.00

Master of Science in Robotics (MSR), Class of 2021

RELEVANT COURSES

15-410 Operating Systems Design/Impl
18-578 Mechatronic Design
16-474 Robotics Capstone
15-440 Distributed Systems
15-462 Computer Graphics
16-385 Computer Vision
16-450 Robotics Systems Engineering
16-389 Robot Kinematics and Dynamics
18-349 Intro to Embedded Systems
10-601 Intro to Machine Learning
15-214 Principles of Software Construction
18-330 Intro to Computer Security
18-240 Structure and Design of Digital Systems

SKILLS

Front End:

iOS / macOS Apps, EmbeddedWizard, Qt5.

Embedded Systems:

ARMv7; STM32; CMSIS RTOS; Arduino; FPGA; OpenMV.

Machine Learning:

Convolutional Neutral Networks.

Robotics:

ROS, MoveIt, V-REP.

LANGUAGES

Proficient:

C, Python, Java, SystemVerilog, MATLAB.

Comfortable:

C++, Swift, Javascript + HTML, Objective C.

EXPERIENCE

Apple Inc. Intern

OS Performance (Summer 2018)

I worked on a memory related feature for macOS.

CoreOS Performance Tools & Infrastructure (Summer 2019)

I worked on some improvements of a performance profiling tool.

Biorobotics Laboratory, Carnegie Mellon University.

Undergrad Research Assistant (May 2017 - Current)

I am working on the vision sensor for a robot under Howie Choset's biorobotics lab in joint with Boeing and CMU researchers. I wrote a high speed pipeline and the algorithm to reconstruct 3D information from structured light imaging.

PROJECTS GLIMPSE

For more information please check my personal website (top right).

"JollyRoger" - CMU Mechatronic Design Project (2019)

*First Place in final competition, won $5.5K prize money.

I led a team of 5 to create a fully autonomous electro-mechanical device manipulation robot. I am really proud of this project both because of its high complexity and our amazing teamwork. Everyone made critical contributions to the system and our hard work paid off.

"Robo Monkey" - Jogging Companion Robot (2019)

"Robo Monkey" is a companion robot that follows a human jogger with both speed and precision. This robot has super high performance chassis, embedded platform and smart algorithms that enable buttery smooth following.

the-flash-sudo - CMU Mobot Contest (2016)

*First Place among undergraduate category, $1K prize money.

I led a team of 3 to create a field robot that could identify and follow coarse lines painted on concrete road. We created our own vision algorithm which could identify barely visible lines and interpolates the missing parts. The result was phenomenal: 90%+ success rate in completing the entire track even under harsh conditions.

Algorithm With A Purpose (2016)

*First place among freshmen participants

In this algorithm competition we were asked to design and optimize a heuristic to deploys "fulfill stations" to serve virtual customer nodes in a complex network. The goal is to make more profit within limited amount of computation time.