Kaiyu Zheng

CONTACT

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EDUCATION

UNIVERSITY OF WASHINGTON, SEATTLE
M.S. in Computer Science
2017 - in progress
B.S. in Computer Science with Honors,
Minor in Mathematics
2013-2017
Cum. GPA: 3.84 / 4.0
Major GPA: 3.85 / 4.0

COURSEWORK

Algorithms (CSE 421)
Operating Systems (CSE 451)
Machine Learning (CSE 446)
Computer Graphics (CSE 451)
Artificial Intelligence (CSE 473)
Computer Vision (CSE 455)
Systm. Programming (CSE 333)

TEACHING

Teaching Assistantship
Foundation of Computation I (CSE 311), fall 2016.
Machine Learning (CSE 446), winter 2017.

SKILLS

Sorted by experience

Language
Python • Java • C/C++ • JavaScript • Ruby• HTML

Tools, Libraries & Platforms
Linux • Git • ROS• Tensorflow • OpenCV • OpenGL • Solidworkds

Web
Rails • Sass • PHP

Database
MySQL • PostgreSQL • MongoDB

EXPERIENCE

UW ROBOTICS AND STATE ESTIMATION LAB | Research Assistant

Professor: Rajesh Rao, Postdoc: Andrzej Pronobis | Apr 2016 – Present

- Assisted with deployment of a mobile robot and maintained an integrated Robot Operating System.
- Improved the mobile robot's navigation system significantly, and wrote ROS Navigation Tuning Guide.
- Developed a pipeline for producing training samples for our ML model, assisting a paper submitted to ICRA 2017. This work is presented in Undergraduate Research Symposium in 2017.
- Developed novel approaches to use Sum-Product Networks to represent graphs and learn topological maps, using Tensorflow. Completed a thesis on this topic.

CME GROUP INC. | Software Engineering Intern

Jun 2015 – Sep 2015 | Chicago, IL

- Built a planning & allocation web application for my project manager to replace his heavy Excel sheets, using Groovy on Grails with IntelliJ. The tool simplified PM's workflow to create JIRA sub-tickets for the next sprint.

MOVEMENT CONTROL LAB | Research Assistant

Professor: Emanuel Todorov; PhD Vikash Kumar | Apr 2015 – Jun 2015

- Device integration with Myo, and Visualized Myo's sensor data, using a matlab-like plotting library in C++ (IDE: Visual Studio)
- Used Myo & dynamixel motors to control a 3D-printed arm that can be wear on a person's forearm, and contucted user testing about it.

UW INFORMATION TECHNOLOGY | Web Developer

Oct 2014 – Jun 2015 | Seattle, WA

- Develop and maintain UW websites. Conducted load testing using Apache JMeter on a WordPress site (IT-Connect) to investigate site slow-down. Workflow involved JIRA, Trello for project tracking, and heavily relied on Git.

ATLAS INNER DETECTOR ALIGNMENT | Undergrad Team Leader

Professor: Shih-Chieh Hsu, Department of Physics | Feb 2014 – May 2014 | Seattle, WA

- Studied the Three-plane Track-fitting Algorithm and used CERN's ROOT Library to graph data sets and presented study report to the professor.

PAPERS

Learning Large-Scale Topological Maps Using Sum-Product Networks

Senior Thesis, arXiv:1706.03416, 2017.

ROS Navigation Tuning Guide

arXiv:1706.09068, 2017.
ROS site url: `http://wiki.ros.org/navigation/Tutorials/Navigation%20Tuning%20Guide`

SIDE PROJECTS

KOOLIO.IO | Jul 2015 – Jan 2017

Non-academic, personal, self-inspired project.

- Koolio.io is a place where you share and view two-sided flippable cards.
- Led team of 4 (developer, designer and social network marketer.)
- Built with Ruby on Rails, PostgreSQL, JavaScript.
- Used NginX & Unicorn as production servers, hosted on AWS.

MYO AUDIO VENTURE GAME | May 2015

Non-academic, personal, self-inspired project.

- User wears a Myo armband, and makes gestures (e.g. left, fist), to control the player to move around in an advanture world, with audio feedback.
- Built with C++, using SDL2 library and Myo API