

Leif Sahyun

250 N. Franklin St. Whitewater, WI
920-650-2198 | leif@sahyun.com | http://leif.sahyun.net

Summary

Motivated Worcester Polytechnic Institute graduate with double major in Computer Science and Robotics Engineering who has worked on over a dozen projects and has completed several graduate-level courses focused on distributed systems.

Education

Worcester Polytechnic Institute (WPI), Worcester, MA

Bachelor of Science, Computer Science and Robotics Engineering

May 2020

Graduate Coursework: Cloud Computing, Computer Networks, Swarm Intelligence, Design of Software Systems

Programming Languages

Most Experience (5+ years)

Java, C/C++, Python

Some Experience

JavaScript, C#, MATLAB, HTML, PHP, SQL, Buzz, R

Libraries and Frameworks

Arduino, Robot Operating System, Google Web Toolkit, Spring Framework, .NET Framework, OpenGL, OpenCV, Apache Libcloud

Software Tools

Git, Eclipse, MongoDB, Google Compute Engine, Amazon Elastic Compute Cloud, Apache Hadoop, Apache Tomcat, SolidWorks

Projects

A sample of projects I have worked on is shown below. A full list can be found at:
leif.sahyun.net/projects

Subnet Server

May 2020 - June 2020

- Built a server to group connected clients based on requested network topologies, notifying clients of their neighbors when a group is created
- Programmed in C# using MongoDB for data storage
- Tested expected use cases with a Javascript websocket testing app while running the server in the Google Compute Engine cloud

Firefighting Remote Exploration Device

August 2019 - April 2020

- Designed a robot to assist firefighters exploring a burning building in either a remote control or autonomous mode
- Worked in a team of 4 on this Major Qualifying Project over the course of a year
- Programmed UI, sensing, and control code in Python and C, and selected sensors and materials to suit the adverse environment

Cloudmixer

March 2020 - April 2020

- Designed a system to manage cloud instances across multiple providers, migrating between providers and instance types to satisfy service-level objectives
- Worked in a team of 3 to implement the system in Python, using Apache Cloudlib and Linux CRIU software
- Tested the system's migration abilities under load with Amazon EC2 and Google Compute Engine

Storyweaver

January 2020 - March 2020

- Created a visual editor web app for writing stories with multiple plotlines using labeled lines on screen with events and notes laid out along them
- Programmed in Javascript with the command design pattern to accommodate different lists of available user tools
- Wrote a short story plot using the app to test its features

Text Chat App

October 2019 - November 2019

- Created a chat server and a desktop client that allows connected users to send messages to each other
- Implemented concurrent threads, connection queues, and socket communication in Java
- Demonstrated communication between multiple clients

Flight Booking App

March 2019 - April 2019

- Created a front-end application to search and book flights in an online database
- Identified project requirements and tests based on statement of work
- Worked in a team of 4 to implement the application in Java using an entity-control-boundary architecture
- Delivered a verification report with the results of tests identified earlier

Autonomous Turtlebot Exploration and Mapping

March 2019 - April 2019

- Programmed a small mobile Turtlebot to autonomously explore and map an area
- Worked with a partner to implement A* pathfinding and SLAM with a LIDAR in ROS Python
- Demonstrated robot's exploration and mapping in a tabletop maze

Robot Sorting Arm

January 2019 - March 2019

- Programmed a 3-DOF desktop robotic arm to sort colored balls based on a camera feed
- Worked in a team of 3 to implement forward and inverse kinematics calculations based on computer vision in MATLAB
- Demonstrated the arm sorting colored balls and reacting to changes in ball location

Enhancing Community Engagement in Hounslow

May 2018 - June 2018

- Determined how to enhance community engagement in the London Borough of Hounslow before, during, and after emergencies
- Led a team of 4 students to conduct interviews with local stakeholders and domain experts to find the best solutions
- Delivered a report on our findings to the Hounslow Contingency Planning Unit

Course Load Scheduler

March 2018 - April 2018

- Designed a full-stack web application that could create, edit, and view course schedules
- Worked in a team of 6 to implement the application in Java using Google Web Toolkit, the Spring Framework, and the model-view-controller design pattern
- Demonstrated the application creating, editing, and viewing schedules

Candle Extinguishing Robot

October 2017 - December 2017

- Built a robot that could find and extinguish a small flame
- Worked in a team of 3 to develop the robot from a stable chassis, adding sensors and a fan
- Programmed in C on an Arduino
- Demonstrated the robot successfully extinguishing the candle and reporting its coordinates

Job Experience

Worcester Polytechnic Institute

August 2019 - December 2019

Robotics Engineering Student Assistant

- Part time 10 hours/week
- Held office hours and review sessions
- Answered student questions on concepts, labs, and homework
- Helped students debug Python and MATLAB code

Activities

President, Science Fiction Society, WPI

January 2019 - January 2020

Events Coordinator, Science Fiction Society, WPI

January 2018 - January 2019