Oshadha Gunasekara

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EDUCATION

Carnegie Mellon University - Pittsburgh, PA
B.S. in Electrical and Computer Engineering, B.S. in Robotics; Cumulative GPA: 3.74 May 2020

- Relevant Coursework: Introduction to Embedded Systems, Fundamentals of Control, Fundamentals of Signal Processing, Robot Kinematics and Dynamics, Mobile Robot Programming Lab, Introduction to Computer Systems, Structure and Design of Digital Systems, Computer Vision, Robotic System Engineering, Robot Mobility in Air, Land, & Sea

SKILLS

Programming: Python, C/C++, MATLAB, JavaScript (TypeScript, React), Java, ElasticSearch, HTML/CSS/Sass, C# (ASP.NET)
Software: SolidWorks, Gazebo, Linux, SVN, Git

WORK EXPERIENCE

Indeed - Austin, TX (Remote)
Software Engineer *April 2022 - March 2023*

- Developed Java business logic and infrastructure for our ElasticSearch-based index builder to consume, index, and sort information from high traffic RabbitMQ and Kafka message queues.
- Communicated with internal customers to start the migration of our existing gRPC/RESTful API to GraphQL.
- Led design and implementation of integration tests for our existing services, resulting in 100% integration test coverage.
- Drove initiative to improve team's Datadog monitors, enabling full monitoring coverage and reducing incident response time.
- Mentored QA engineer in automated testing development, allowing him to effectively contribute to the team's testing infrastructure.

Epic Systems - Verona, WI
Software Developer *July 2020 - March 2022*

- Liaised with project teams with customers, physicians, developers, and other Epic staff to design and develop new functionality for government regulations and other application enhancements.
- Drove communication with stakeholders to design and implement functional enhancements to Epic's software using ASP.NET, React, and InterSystems Caché (NoSQL database).
- Assisted end-users in person during floor-support shifts for new customers going live on the software.
- Analyzed weekly workflow test data as my workgroup's performance representative.
- Mentored a new hire through their training and transition into their day-to-day developer responsibilities.

GROwL Lab (University of Arizona) - Tucson, AZ
Research Associate *May 2018 - Aug 2018*

- Designed and wrote a MATLAB/ROS interface to allow communication between 3 TurtleBot robots and a Vicon Motion Capture system.
- Used the nonholonomic unicycle approximation to implement trajectory following for singular robots and formation control for multi-robot swarms.
- Wrote a MATLAB Kalman Filter to estimate robot state (position and orientation) given noisy emulated GPS measurements.
- Implemented and tuned a Particle Filter to successfully determine robot state given only distance from a fixed beacon.

PipeDream (Carnegie Mellon University) - Pittsburgh, PA
Research Associate *May 2017 - Jul 2017*

- Worked with a research team of 10 to build a 30 inch diameter pipe-crawling robot to map radioactive deposits for future decontamination.
- Developed and integrated several Gazebo plugins with ROS to build a robot simulation, which was used to test critical robot control and safety features, allowing for the development of control software prior to robot manufacturing.
- Created a Python GTK+ 3-based UI for the front-end for processing recorded data.

PROJECTS

The Atlas Project (Student Organization at Carnegie Mellon University) - Pittsburgh, PA
Chairman & Software Developer *Sep 2016 - May 2020*

- Led a group of 15 undergraduate students to develop an autonomous gravity-powered vehicle, known as a buggy.
- Supervised the creation of a Work Breakdown Structure and a Gantt Chart for planning the project lifecycle.
- Introduced weekly stand-up meetings, and standardized task creation and assignment.
- Campaigned successfully for recognition of autonomous buggies by Sweepstakes, the buggy governing organization.
- Wrote a Python Dead Reckoning estimator in ROS to estimate state by fusing IMU and encoder data.
- Used the Dead Reckoning estimator to create a map of the course with the GMapping ROS package.
- Developed a C++ Pure Pursuit controller to allow the vehicle to steer itself on a predetermined path.
- Designed and implemented a C++ feedback controller to get an accurate steering angle from the steering controller.