Shawn Hanna

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www.shawnsrobots.com

Summary

Roboticist with a focus in solving the high-level challenges associated with robotic systems.

Work Experience

Sr. Software Engineer, Kaarta September 2018 – Present

Designed and developed a variety of improvements to Kaarta's codebase, focusing on the improvement of the base system accuracy and speed.

Head of Field Operations, Platypus LLC April 2017 – September 2018

Managed field operations for Platypus' fleet of autonomous boats. In charge of manufacturing, repair, customer training and support, and engineering operations.

Senior Software/Systems Engineer, Carnegie Mellon University May 2017 – September 2018

Developed software for the various needs of the privacy related research conducted by the CMU Chimps Lab. These tasks included Android software and user experience design and development, frontend and backend web services, and project management improvements.

Senior Software Engineer, TORC Robotics June 2014 – December 2016

Developed algorithms and implemented improvements to perception related projects that added capabilities and improved the reliability of TORC's robotic vehicles.

Projects

Kaarta - Mapping and Localization Algorithm improvements

Algorithm expert for the Kaarta Mapping Engine and developer of novel solutions for customers

Refactored, rewrote, and improved every step of the system that Improved the speed and accuracy of Kaarta's mapping algorithms by up to 70%.

Platypus - Robotic Boat Fleet Manager

In charge of customer interaction, training, and field work for 40+ robotic boats

In charge of all areas of hardware build and customer facing work for the largest boat deployments conducted by Platypus. Engaged with customers from initial demonstrations through completion and assumed accountability for delivering the final product.

Astrobotics - Lunar Rover

Design, develop, and test a lunar rover for the Google Lunar XPRIZE

Team Lead for the software subsystem which created a robust software platform that satisfied all requirements for completion of the 2nd stage prize in simulated moon gravity, vacuum, and temperatures.

CMU - Heterogeneous Multi-Robot Navigation and Exploration

Create a heterogeneous multi-robot system where robots forage objects in an unknown environment

Designed a multi-robot system from scratch that solves a complex sensing and robot fusion task while utilizing proper business practices and strategies to create a marketable product.

Education

Carnegie Mellon University, Pittsburgh PA — Finished Dec 2014
Master of Science, Robotics Systems Development — GPA 3.59

University of Pittsburgh, Pittsburgh PA — Finished May 2013
Bachelors of Science, Computer Engineering — GPA 3.21

Skillset

- Robotic Perception
- Real-Time Mobile Robotics Applications
- Sensor Fusion
- Algorithm Design & Implementation
- SLAM
- Product Design
- ROS - Robot Operating System
- Non-Linear Optimization
- LOAM - Lidar Odometry and Mapping
- Cloud Computing - AWS
- Hardware Driver Development
- Infrastructure Tool Design and Development
- Path Planning/Navigation
- Team Leadership
- Systems Engineering & Project Management
- Electronic Circuit Debugging
- Differential Equations and Linear Algebra
- User Experience Design
- Computer Vision - Intermediate Level
- GPU programming - basics
- Machine Learning - theory
- Embedded Systems Design
- Customer Service and Training
- Field Operations

Platforms and Utilities

ROS, OpenCV, BOOST, Ceres Solver, AWS, Docker, Android Studio, Qt, Visual Studio

Programming Languages

C++, Python, HTML/CSS/NodeJS/PHP/SQL/JavaScript, Java (and Android Studio), C#, Matlab, CUDA, VHDL, Labview

Electronics & Mechanics

Soldering, Circuit Design, Motor Control, 3D Modeling, FPGA Design