Srikanth Aravinda Giovanni Schelbert

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EDUCATION

Northwestern University McCormick School of Engineering (Evanston, IL)   *Expected Graduation Dec. 2024*
Masters of Science in Robotics   GPA: 3.85/4.0
<u>Recent Coursework:</u> Embedded Systems (ROS2), Robotic Manipulation, Swarm Robotics, Dynamics and Simulation
<u>Current Coursework:</u> Robotic Navigation and Sensing (SLAM, C++, CMake), Mechatronics (C), Machine Learning

University of Pittsburgh Swanson School of Engineering (Pittsburgh, PA)   *Graduated Apr. 2020*
Bachelor of Science in Mechanical Engineering; Minor in Chemical Engineering

RELEVANT PROJECTS

Simultaneous Localization and Mapping (EKF SLAM) from Scratch (C++, CMake, ROS2)   *(ongoing)*
• Programming a feature-based EKF SLAM pipeline using C++ and ROS 2 for both simulation and real turtlebot3 robot.
• Developing a kinematics control and odometry library for differential drive robots.
• Implementing a landmark detection algorithm through supervised learning and data association.

Autonomous Salt Distribution Robot (Python, C++, ROS 2)   *(ongoing)*
• Writing and Upgrading packages for the Clearpath Jackal robot to use ROS2 Iron with Real-time Appearance based mapping.
• Developing a navigation algorithm using Lidar based SLAM and the Nav2 package for ROS.
• Designed an attachment mechanism for a salt-spreading trailer to allow the robot to easily attach and detach to the spreader.

7-DOF Robot Human-in-the-Loop "Hangman" game player (Python, ROS 2)   *Fall 2023*
• Led a team of 5 to develop a Python ROS2 package for a Franka 7-DOF robot arm to autonomously play "Hangman".
• Created a Python ROS 2 API wrapper to plan and execute trajectories through MoveIt2.
• Designated "system integrator" ensuring that Optical Character Recognition, gameplay, and manipulation worked effectively.

RELEVANT WORK EXPERIENCE

Hitachi Rail STS (Pittsburgh, PA)   *Jun. 2022 - Aug. 2023*
Associate Hardware Engineer
• Reduced costs by $10,000 through a root-cause analysis and redesign of LED signal thermal pads.
• Designed multiple hardware components for onboard and ground equipment reducing manufacturing costs by over 10%.
• Authored technical documentation resulting in the introduction of over 30 new revisions of railway parts over multiple projects.
• Designated work package lead researching 3D printing techniques to assess the business feasibility of introducing additive manufacturing to the repertoire of Hitachi STS.

Gather AI (Pittsburgh, PA)   *Nov. 2020 - Jun. 2022*
Deployment/Field-Ops Engineer
• Established optimized processes to deploy an autonomous drone in warehouses leading to more than $0.75 million committed ARR.
• Interfaced with new pilot customers leading to more than 70% of pilot clients converting to full-time yearly contracts.
• Designed and fabricated multiple hardware components for an autonomous drone charge pad.
• Performed significant electrical testing of smart batteries using benchtop power supplies, multimeters, and load cells.
• Administered numerous QA tests using ROS, Rviz, and Python to further develop the scope and robustness of the robot's software, autonomy, hardware, and UI leveraging end-to-end knowledge of the product.

RELEVANT SKILLS

Programming Languages: Python, C++ , C, BASH, MATLAB, HTML/XML, LaTeX
Robotics: ROS2/ROS, Ignition Gazebo, Robot kinematics, Motion Planning, MoveIt, OpenCV, AprilTags
Manufacturing: SolidWorks (CAD), Fusion 360 (CAD), SolidEdge (CAD), ANSYS, Machine Shop Tools
Software: Linux (shell script), Git, Github, Cmake, Unit test/Pytest, MATLAB/Simulink, Google CoLab (Python), Atmel Studio ©
Soft Skills: Team Leadership, Coaching (6 years experience), Customer Interfacing and Communication, Systems Level Thinking