Sameer Arjun Satheesh

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Technical Skills

Robotics & Autonomy: ROS, ROS2, SLAM, Path Planning (RRT*, MAPP), Sensor Fusion, OpenCV, Kollmorgen NDC
Software & Control: Python, C++, Embedded C++ (Firmware), MATLAB, PLC (Ladder Logic), Git, JIRA, Docker, Linux (Ubuntu/Bash), TwinCAT3
Mechanical & Simulation: Siemens NX, CATIA, ANSYS (FEA), SolidWorks, Gazebo, AnyLogic, GD & T, DfM
Protocols & Diagnostics: CAN Bus, XML/JSON, TCP/IP, Wireshark, API Integration, Toyota DataCollector, Elasticsearch

Professional Experience

Applications Engineer II July 2024 – Present
Toyota Material Handling / The RAYMOND Corp. *Salt Lake City, UT*

- Architected and deployed 26 autonomous forklift systems utilizing Kollmorgen NDC Solutions, specializing in AGV path planning, mission logic design, and robust system architecture for warehouse automation
- Developed localization and routing models for complex site layouts, ensuring scalable navigation for AGV fleets interacting with AMRs in dynamic warehouse environments
- Resolved critical system failures via Wireshark packet analysis and CAN bus diagnostics, improving control logic & enhancing fleet reliability
- Integrated AGV platforms with WMS/ERP systems via RESTful APIs for automated task execution & real-time fleet tracking
- Standardized technical documentation and led cross-functional training sessions to streamline internal workflows and customer onboarding processes

Electro-Mechanical Engineering Intern June 2023 – August 2023
Stanley Black and Decker Inc. *Towson, MD*

- Engineered SBS (Single Board Solutions) trigger modules for universal power tool architectures using CATIA, optimizing mechanical design for manufacturability and assembly efficiency
- Resolved DeWalt impact drill failure modes and co-introduced polymer-based capacitors to SBS architectures, enhancing module reliability and electrical performance
- Contributed to CraftsMan EV Charger product pipeline for innovation challenge, demonstrating strategic product development and market expansion capabilities

Graduate Engineering Trainee March 2021 – July 2022
MOLEX India Business Services Pvt. Ltd. *Bangalore, India*

- Designed and analyzed high-performance power and signal connector systems using Siemens NX for diverse packaging applications including automotive and data center infrastructure
- Saved $1 million annually by implementing FEA-based mechanical drop test simulations, significantly improving connector robustness and accelerating time-to-market by 6 weeks
- Increased current carrying capacity by 120% through validation of liquid cooling technologies for data center high power and signal connectors, supporting next-generation infrastructure demands
- Presented technical results at the 2022 Open Compute Project Global Conference, showcasing innovation in thermal management solutions

Education

University of Maryland, College Park College Park, MD
Master of Engineering in Robotics; CGPA: 3.78/4.00 *Aug. 2022 – May 2024*

Visvesvaraya Technological University Bangalore, India
Bachelor of Engineering in Mechanical Engineering; CGPA: 8.0/10.0 *Aug. 2016 – Aug. 2020*

Key Projects

Autonomous 4-Wheeled Mobile Manipulator | *Python, Raspberry Pi, Arduino, OpenCV* | YouTube

- Architected differential drive robot with parallel-jaw gripper utilizing Raspberry Pi 4 for high-level decision-making and Arduino Nano for low-level motor control
- Developed computer vision pipeline for real-time color and image recognition with depth estimation and implemented sensor fusion using IMU, ultrasonic sensors, and wheel encoders for precise localization

Swarm Robotics for Industrial Applications | *C++, ROS2 Humble, Gazebo* | GitHub

- Architected swarm system implementing Multi-Agent Path Planning (MAPP) for 20 TurtleBots achieving coordinated navigation in dynamic environments
- Leveraged Agile methodologies to develop communication stack and obstacle avoidance logic within the ROS2 ecosystem

Improved Path Planning via RRT*N Algorithm | *Python* | GitHub

- Developed normalized RRT* variant using probability distribution functions to bias node generation, reducing computational overhead by 40% and optimizing path convergence rates in complex occupancy grids

Honors & Awards

Best Research Paper Award – Make in India Research Paper Contest, Project Council, Government of India
Winner – Super Float Idea Challenge, MOLEX India Business Services Pvt. Ltd.
Certificate of Appreciation – Emergency Response Team at MOLEX-KOCH Industries for COVID-19 pandemic volunteer work