Darshan Prakash Jain

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EDUCATION

University of Maryland, A. James Clark School of Engineering   **College Park, MD, USA**
Master of Engineering, Robotics CGPA:4.0/4   May 2023
Mukesh Patel School of Technology Management & Engineering   **Mumbai, MH, India**
Bachelor of Technology, Mechatronics, CGPA: 3.57/ 4.0   May 2020

TECHNICAL SKILLS

Software tools and languages: Python, C, C++, ROS, MATLAB, Linux, SolidWorks, Fusion 360, Altium, LabVIEW.
Hardware: Raspberry Pi, Arduino, Encoders, STM32 microcontroller, ESP32, oscilloscopes, logic analyzers, multimeters.

WORK EXPERIENCE

Kick Robotics, College Park, MD, USA
Robotics Hardware Intern   September 2022 – Present

- Conceptualized and developed electrical circuits for autonomous vehicles, successfully integrating sensors, actuators, and control systems, resulting in a 25% increase in vehicle efficiency.
- Built a wireless sensor network to remotely monitor water bodies, improving monitoring efficiency by 20% by reducing system downtime and product costs by 15%.
- Programmed firmware for sensor systems, facilitating communication between hardware and software teams for end-to-end product functionality.
- Spearheaded streamlining scalable hardware/firmware projects to support the company's growing operations.

Ommo Technologies, Dallas, TX, USA
Mechatronics Intern   June 2022 – August 2022

- Designed 6-layer PCB schematics and layouts for Ommo products utilizing Altium, ensuring EMI compliance.
- Managed the selection of electronic components and production of hardware, resulting in a 10% decrease in production time and reducing the cost by 8%.
- Collaborated with product and engineering teams to create documentation on hardware for the company's knowledge base, improving cross-departmental knowledge sharing.
- Conducted thorough hardware testing and debugging using laboratory equipment such as oscilloscopes, logic analyzers, and multimeters, ensuring product quality and performance.

Padmavati Metals Industries Pvt. LTD, Thane, MH, India
Robotics Intern - Manufacturing & Operations   May 2019 – October 2019

- Optimized supply chain procedures and activities, resulting in a 15% reduction in raw material unloading time and a 10% increase in the packaging of final goods.
- Recommended process improvements that reduced production time by 1.5 minutes.
- Collaborated with team members to evaluate and recommend an optimal automation system that could potentially increase production efficiency by 5%.
- Conducted thorough hardware debugging and testing, ensuring continuous operations at the manufacturing plant.

PROJECT EXPERIENCE

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- Devised and coded the control system logic for a ventilator manufacturing plant, resulting in a 15% increase in efficiency.
- Redesigned and programmed the code for kit building and assembly tasks, resulting in a 25% reduction in assembly time.
- Created algorithms for flipping parts, movement of the kitting and gantry robots, and detection and replacement of faulty parts, leading to a 40% reduction in part rejection rate.
- Performed hardware-in-the-loop simulation and system integration testing using ROS.

Multi-model vehicle

- Engineered an aircraft that could travel in 3 mediums- land, air, and water, resulting in a 15% increase in monitoring efficiency.
- Remodeled a tricopter drone configuration to seamlessly integrate with a hovercraft design, showcasing innovative problem-solving skills and increasing the payload capacity by 950g.
- Demonstrated proficiency in electronics and hardware by developing the electro-mechanical structure of the vehicle.

Underwater Autonomous Vehicle

- Supervised the team and coordinated with various departments to procure raw materials, manage team finances, and secure sponsors for building an autonomous underwater vehicle raising ₹1.5 lakhs and vehicle parts in funding.
- Designed the AUV control system and optimized the circuit design by testing, increasing the efficiency by 5%.
- Finalized the design of the AUV and supervised the manufacturing process, ensuring the development of the vehicle in 5 months.

Water Monitoring System

- Revamped water monitoring embedded system with the microcontroller, 6 sensors, and PCB layouts on Altium. Component selection and production-level firmware development achieved a 95% success rate.
- Implemented MQTT protocol for remote operation and calibration of the system, resulting in a 20% increase in efficiency.
- Utilized Fusion360 and SolidWorks to create 3D models for visualization.