S Annamalai

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Education

Amrita Vishwa Vidyapeetham **Sep. 2020 – Oct 2024**
Bachelor of Technology in Electronics and Communication Engineering *Bengaluru, Karnataka*

Kendriya Vidyalaya ASC Centre **Sep. 2019 – May 2020**
12th CBSE with Computer Science *Bengaluru, Karnataka*

Experience

Artpark IISC - Ati Motors, Jalahalli **April 2024 – Present**
Perception Engineer Intern *Bengaluru, Karnataka*

- Conducted RCA to identify and address errors in deep learning models, Prepared comprehensive reports to enhance model performance.
- Designed and developed an auto-hitch feature for the Tugger pilot vehicle using YOLOv7 in an Development environment and achieving an 81 percent model accuracy for testing and validation datasets.

Decathlon Sports India, Whitefield **March 2023 – July 2023**
Omni Sports Leader *Bengaluru, Karnataka*

- Provided customer service by offering personalized sports advice and technical assistance to customers in-store and online.
- surpassing store sales targets for four consecutive months through collaborative teamwork, while also excelling in managing both trekking and swimming sections simultaneously with an exceptional customer relation.

Sri Durga Engineering Works, Ambattur Estate **January 2023 – February 2023**
Apprenticeship *Chennai, Tamil-Nadu*

- Developed a Python-based bar code attendance system using Raspberry Pi for weekly wage workers. Generates Reports in Tamil detailing hours worked, overtime, and calculates wages. Exports data to Excel sheets, streamlining weekly payroll for accountants.
- Gained hands-on experience operating Power-Tools, lathes, and welders, while contributing to production planning through material procurement, inventory management, and task scheduling.

Projects

Swarm AMRs (Logistics and Warehousing) | *Python, ROS2, Gazebo, RVIZ* **Present**

- Implemented collaborative pattern-forming AMRs with collision-free navigation and collective transport using ROS2, Gazebo, and Groot2 for task planning in a simulated warehouse environment.

Autonomous Water-Trash-Collector | *Python, RaspberryPi, Computer Vision* **August 2023**

- Designed and fabricated a YOLOv4-powered, autonomous water-surface litter-collecting robot for swimming pools, undergoing rapid prototyping and ground & water testing.

Live Chessboard2FEN | *OpenCV, Python, Web Stack* **July 2023**

- Developed a real-time chessboard-to-FEN converter using computer vision and deep learning CNN models, achieving 96% accuracy in converting piece locations to FEN for analysis on Lichess.

Solar2Inverter | *Circuit Design, Soldering* **April 2023**

- designed and engineered a solar inverter system from a traditional model, incorporating automated mains-to-solar switching, Pulse Width Modulation (PWM) charging for a 1kW solar load, and intelligent shutdown functionality.

Spider-Bot | *Arduino, Python, Embedded C* **September 2022**

- Optimized a stair-climbing Hexapod robot with gyro sensors and actuators for adaptive footing adjustment. Implemented a mood-based emoticon display using a programmable Matrix LED controlled by Python and gyro sensor data.

Technical Skills

Languages: Python, C++, Embedded C, VHDL
Developer Tools: ROS2, RVIZ, Gazebo, Git, BehaviorTreeCPP, Cadence, Auto-desk Inventor, LTSPICE, MATLAB
Coursework: Deep Learning, Digital Electronics, Embedded Systems, VLSI - FPGA, Smart Sensors

Leadership / Extracurricular

Combat Robotics Team Lead
Electrical-Subsystem Head - Rover Team - ACROM - RAS - Amrita
Plan the Unplanned : Outdoor Trek Lead
Volunteer: VTVo (Elders Adda), Action Hero (Black Noise Community)