**TEJASHWINI RAJASHANKAR**

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**EDUCATION**

**Master of Science in Electrical Engineering Los Angeles, CA**

California State University, Los Angeles *Dec 2024*

Relevant courses: ECE Computation, Embedded Architecture, Computer Architecture, Advanced Digital Communication, Computer Organization, Renewable Energy Sources

**Bachelor of Engineering in Electrical Engineering Bangalore, India**

Rajarajeswari College Of Engineering *Aug 2021*

**SKILLS**

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| --- | --- |
| **Programming Languages** | C, C++, Python, VHDL, HTML, CSS, JavaScript |
| **Tools & Software** | Git, MATLAB, FPG, AutoCAD, CAD, OrCAD, LabVIEW, Altium, LTSpice |
| **Frameworks & Databases** | Django, My SQL |
| **Embedded Systems** | Embedded C, RTOS, Firmware development, DSP, FPGA, SOC, ASIC |
| **Hardware** | PLC, PCB, Circuit Design, HMI, Troubleshoot, System Design, Engineering design |

**PROFESSIONAL EXPERIENCE**

**California State University, Los Angeles: Student Research Assistant, Los Angeles, CA Nov 2023 - Present**

* Collaborated on research presentations to boost academic engagement and team visibility and played a key role in the development and execution of research experiments.
* Enhanced research accuracy and efficiency by implementing advanced data analysis techniques, leading to a 15% improvement in data validation and reliability.
* Served as a Data Analyst, leveraging expertise in qualitative data analysis using Dedoose software to extract meaningful insights and contribute to comprehensive research reports.

**X-Ciencia technologies: Artificial Intelligence intern, Bangalore, India Aug 2021 - Sep 2021**

* Improved AI algorithms for a "Fake News Detection on Social Media" project using Anaconda Navigator and Jupyter Notebook, enhancing model precision.
* Utilized libraries such as NumPy, Pandas, and Matplotlib to handle data manipulation, analysis, and visualization effectively.
* Reduced model training time by 20% through optimized Python code and algorithm adjustments, ensuring efficient use of resources and faster results.

**Edgate Technologies: Intern, Bangalore, India Aug 2020 - Sept 2020**

* As a Robotics Intern, implemented software upgrades for robotic systems, minimized disruptions, and ensured seamless transitions using tools like ROS (Robot Operating System) and Gazebo.
* Participated in brainstorming sessions, offering innovative suggestions, and creating comprehensive technical documentation to support the development process.
* Resolved over 30 critical bugs using MATLAB and other diagnostic tools, resulting in a 25% increase in software reliability and user satisfaction.

**Accenture: Embedded systems Intern, Bangalore, India Aug 2019 - Dec 2019**

* As an Embedded Systems Intern, enhanced embedded system software and firmware reliability using Python on ARM processors and tools like Keil and Eclipse.
* Led a team project that reduced development time by 10% and conducted a workshop on embedded system design utilizing JTAG and other debugging tools.
* Streamlined firmware testing processes with Jenkins and LabVIEW, achieving a 15% improvement in the detection of functional anomalies and ensuring higher product quality standards.

**ACADEMIC PROJECTS**

**Autonomous Army Robot for Border Surveillance (Python) Jan - Aug 2021**

* Developed an autonomous surveillance robot using Python and Raspberry Pi, enhancing border security by automating patrols.
* Utilized tools such as OpenCV for image processing, ROS for robot control, and various sensors for environmental data collection.
* Improved threat detection capabilities by 15%, significantly reducing military risks through optimized firmware and reliable system performance.

**IoT Smart Water Management System (Texas Instruments) March - Jun 2021**

* Implemented an IoT-based smart water management system using Texas Instruments hardware, real-time weather data analysis, and irrigation optimization.
* Developed embedded firmware using C/C++ for sensor integration and control, and created a user-friendly dashboard with Node-RED and Python for data analysis.
* Achieved a 30% reduction in water usage and a 20% increase in crop yield, enhancing decision-making through improved climate prediction.

**Radar System Jan - May 2022**

* Programmed servo motor rotation and real-time data logging, providing comprehensive spatial analysis and precise distance measurements, logging hundreds of data points per session.
* Created a customizable and low-cost solution with adjustable scan range and speed, ensuring flexibility and accessibility for various applications, significantly improving mapping accuracy.
* Developed and implemented an Arduino-based Automated Distance Measurement Scanner for precise, cost-effective environmental scanning in robotics and security, featuring 15 to 165-degree scans, real-time data logging, and customizable settings.

**Smart Farming Oct 2023**

* Developed a Python-based monitoring and control system for smart farming and greenhouse environments, using Zephyr RTOS and nRF Connect SDK to integrate sensors and automate responses based on predefined thresholds.
* Implemented functions for real-time data logging, remote web page updates, and automated power management, enhancing system reliability and reducing manual intervention by 40%.
* Utilized a Nordic Semiconductor board and SEGGER Embedded Studio to create a customizable and efficient solution, improving water management by 25% and ensuring optimal environmental condition.

**Home Automation (C) May 2023**

* Utilized Zephyr RTOS, Bluetooth Low Energy (BLE) stack, and sensor integration libraries for precise environmental monitoring and efficient data management.
* Improved IoT connectivity for various smart home applications, providing a robust and reliable solution for enhanced smart home technologies.
* Developed and deployed a Bluetooth-enabled Smart Home Edge Node using Zephyr RTOS and integrated sensors, achieving over 90% reduction in sensor errors and enhancing data accuracy.

**Smart Lamp System (PSoC Creator 4.4) Sep - March 2023**

* Developed a Smart Lamp Control System using the Cypress PSoC 5LP board, integrating motion sensors and programmable timers to automatically adjust outdoor lighting.
* Utilized PSoC Creator for system design and firmware development, implementing energy-saving algorithms to optimize performance.
* Achieved a 30% reduction in energy usage, enhancing automation and energy efficiency, and contributing to sustainable energy practices.