ARJUN YADAPADITHAYA

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PROFESSIONAL EXPERIENCE

Research & Teaching Assistant

Illinois Institute of Technology, Chicago, IL — January 2024 - Present

- Engineered and fabricated custom PCB prototypes to monitor steam trap health, integrating multiple thermocouples, piezo-electric accelerometers, and an ARM Cortex-M0 based microcontroller for precision diagnostics.
- Optimized system firmware for seamless hardware integration, implementing real-time data acquisition and processing through a sub-GHz gateway that supports a multi-node network for comprehensive monitoring and system performance evaluation.
- Automated data collection and logging workflows with a dynamic dashboard powered by InfluxDB, enabling real-time performance benchmarking for system nodes and gateways hosted on DigitalOcean, ensuring operational efficiency and scalability.

Automation Engineer

Ericsson, Bengaluru, India — January 2023 - August 2023

- Led automation of performance benchmarking and data parsing tasks, reducing manual operation time by 25% and enabling streamlined workflows for enhanced efficiency in server and network system evaluations.
- Enhanced database integrity and system performance by automating security protocols with MobaXterm, reducing data leakage risks by 4% and improving data accuracy in a high-performance environment.

Senior Software Engineer

Colt Technology Services, Bengaluru, India — August 2021 - January 2023

- Constructed an NPM package simplifying command line git workflow and enhancement efforts for a web application, addressed 2 PRs a day, ensured seamless user experience, and introduced features to enhance overall functionality.
- Transitioned deployment processes from Jenkins to Rancher for efficient container management, supporting virtualization and enabling scalability across multiple systems in a hybrid environment.

Embedded Systems Intern

Vitvara Technologies, Mangalore, India — April 2020 - August 2020

- Engineered a Smart Warehouse Management System using an ESP32 chip to optimize inventory control, reducing processing time by 68% and boosting overall operational efficiency.
- Designed a sun-tracking solar panel system with MSP430 microcontroller, incorporating energy-efficient algorithms and servo motors to increase solar energy capture, enhancing system sustainability.
- Facilitated workshops on IoT and microcontrollers, leading hands-on projects that demonstrated real-time data monitoring and system configuration for over 60 students.

PROJECT EXPERIENCE

Smart Energy Meter — March 2024 - Present

- Engineered a data-sniffing system by hacking into the op-amp of a Kill-A-Watt device, converting raw analog signals into current, voltage, and power values using machine learning algorithms to achieve accurate real-time calculations of energy usage.
- Implemented an ESP32-based solution to log data via Wi-Fi, transferring energy consumption data to a database for continuous monitoring, analysis, and insights, using a microSD card and RTC for precise data storage and timestamping.

Battery Operated Radiator Control — October 2023 – Present

- Developed BORC, an automated temperature control device for older buildings to adjust radiator valve settings based on user-defined set points.
- Ensured reliable data logging and communication using a 915MHz transceiver, facilitating real-time data upload to a central InfluxDB database and integrating C++ and Python code for seamless system operation and performance monitoring.
- Achieved 74% cost savings in energy consumption by optimizing temperature control and reducing electricity usage.

EDUCATION

Illinois Institute of Technology, Chicago, IL — May 2025

MS, Electrical and Computer Engineering, GPA: 3.88 / 4.0

- Courses: Digital Signal Processing, OOPS and ML with C++/Python, Hardware Software Co-design, Computer Vision & Image Processing, Hardware Security and Advanced Computer Architectures, Cloud Computing & Native Systems, Elements of Smart Grid.

Nmam Institute of Technology, Karnataka, India — June 2021

BE, Electronics and Communication Engineering, GPA: 3.7 / 4.0

- Courses: VLSI Circuits, FPGA design, PIC & ARM MCU, Embedded Systems, Data Structures and Algorithms using C++, AEC, DEC.

SKILLS

Languages: C, C++, Java, Python, SQL, MATLAB.

Technologies & Tools: Linux, Nginx, LTSpice, Docker, KiCAD, PCBA, Logic Analysers, Sigma Studio, CCS, Git, Pytorch, TortoiseSVN, Grafana, Flask, MongoDB, Jenkins, Rancher, Angular, MobaXterm, Raspberry Pi, Wi-Fi, Bluetooth, SPI, UART, I2C, I2S.