Roshan Shrestha

Software Engineer | Product Development
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Professional Summary

Embedded software engineer with **3+** years of experience in embedded system design, product development, and testing. Proficient in C, C++, and Linux environments, with hands-on experience in developing and debugging embedded firmware for complex systems. Seeking to contribute to products as an Embedded Engineer to drive innovation in intelligent systems.

Education

UT Arlington Arlington, TX
BS in Computer Science, **GPA:** 3.8/4.0 May 2021
Relevant Coursework: Robotics. Computational Theory. HCI. Theoretical CS. ML. Data Science. Computer Graphics. Computer Networks.

Areas of Expertise

Full SDLC, Embedded Systems, UI Development | Data Synchronization & Cloud Integration | Debugging, Log & Data Analysis | CAN Logs, Equipment Classification | Database Optimization | Linux Proficiency

Technical Skills

Programming: C, C++, Qt, Python, SQL, Squish, Google Protobuf, SIL, HIL, TDD
Embedded Systems: Embedded frameworks (Linux, freeRTOS)
Data Visualization: QGIS, CSV, Log Analysis, CAN Analyzer, Trace Client, Datadog, Elastic
Protocols & Interfaces: CAN, MQTT, SPI, I2C, NFC, UART, GPIO, Wi-Fi
Hardware Debugging: IDE, JTAG interfaces, TraceLogs, DebugDump, ErrorLogs
Microprocessors: ESP32-C6, Arduino boards, RaspberryPis
Development Tools: Git, CoCo, Jenkins, ADO, Rally
OS: Linux (VMware, VirtualBox, WSL), Windows

Relevant Experience

L&T Technology Services (Contractor for John Deere) Plano, TX
Embedded Software Engineer April 2022 – Present

- Spearheaded product development for John Deere's embedded display systems, focusing on precision agriculture, plugins and driver development using Qt C++ and ensuring seamless data synchronization between machines and cloud platforms.
- Led classification and integration efforts for a wide array of John Deere equipment, including Tractors, Spreaders, Harvesters, Sprayers, and GPS models (SF6000, SF7000, SF7500), optimizing data management and user accessibility.
- Developed and maintained over 12 equipment plugins, enhancing the versatility of John Deere's product line for various agricultural machinery.
- Worked primarily in a Linux environment, using VMware, VirtualBox, and WSL, ensuring efficient cross-platform development and debugging.
- Debugged and resolved critical field issues using Trace Client, log file (.csv) analysis, CAN analysis, and field data visualization with QGIS, resulting in optimized equipment performance.
- Collaborated closely with cross-functional teams to ensure real-time data synchronization between on-board displays and cloud platforms, improving equipment monitoring and analysis.
- Managed classification of over 50,000 equipment models, streamlining equipment data management & sync, added enhanced user interfaces.
- Optimized UI functionality, improving design responsiveness and cutting test time by 20%.
- Facilitated clear and effective communication of technical information to customers, team members, suppliers, and various units.

L&T Technology Services Plano, TX
Software Engineer August 2024 – Present

- Developed and implemented embedded firmware for the ZekerIt system, utilizing microcontrollers such as Raspberry Pi and low-power ESP32-C6-DevKitC-1-N8.
- Integrated various sensors and door locks, managed protocols (I2C, SPI, UART, JTAG), and executed Board Services Program (BSP) using FreeRTOS and multithreading.
- Enabled Wi-Fi communication with servers, managed power supply requirements, and monitored hardware interaction and performance of the ESP32 SoC.
- Controlled components and radio frequency readers, conducted rigorous testing and debugging to ensure robust and reliable performance.

L&T Technology Services (Contractor for John Deere) Peoria, IL
SVG Team Lead August 2021 – March 2022

- Led a team of 6 engineers in transitioning from PNG to SVG UI assets, improving display performance across various resolutions.
- Streamlined codebase functionality, managed task prioritization, and conducted quality assurance to deliver high-quality display scaling on time.
- Developed scripts and participated in company hackathons to automate tasks, saving the team significant time in their workflows.

Aleks Omega Cedar Hill, TX
Software Engineering Intern January – May 2021

- Engaged in the creation of the Bidding Estimator Tool, embracing the responsibility of design and implementation as a means of contributing to the greater whole.
- Approached each line of code with diligence, ensuring adherence to Python standards and fostering a culture of excellence in craftsmanship.
- Utilized Git for version control, recognizing the importance of collaboration and the preservation of collective effort in the pursuit of innovation.
- Met challenges in technical design with a calm mind, resolutely resolving issues to enhance the tool's functionality and user experience.
- Reflected on the impact of UI improvements, understanding that simplicity and clarity serve to elevate the user's journey.

Leadership

Nepalese Society Arlington Arlington, TX
International Student Mentor January - September 2019
Guided new international students as they adjusted to life in a foreign land, offering transportation, advice, and support. Through small acts of service, I aimed to ease their transition and help them find their footing in a new environment, knowing that the greatest service we can offer others is to make their burden lighter.

Language Skills and Interests

Languages: Fluent Nepali & Hindi. Beginner Spanish.
Interests: Gym, Tennis, Ping Pong, Soccer, Manga Comics, Books, Hiking.