DIVYANSH RAI

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EDUCATION

Bachelor of Electronics and Communication 2018 - 2022
Nirma University *Ahmedabad, Gujarat*
CGPA - 7.8

SKILLS

- SoCs & Hardware (STM32H7, iMX8MP, iMX6Q Lattice CertusPro-NX, FUSB307B, QCA8337N)
- Embedded Operating Systems (Linux, FreeRTOS)
- Serial Protocols (USB, Ethernet, UART, SPI, I2C)
- Firmware Development
- Software Tools (VS Code, STM32 Cube IDE, Lattice Propel, Lattice Radiant, Atollic TrueSTUDIO)
- Git, SVN, Jira
- Debugging and Testing
- Teamwork, Leadership, Networking

TECHINCAL SUMMARY

Embedded Developer with experience in building and maintaining embedded systems on Linux and RTOS platforms. Proficient in Yocto-based Linux distributions, device driver development, board bring-up, and basic scripting to streamline workflows. Skilled in kernel-level debugging, firmware development, and system integration for ARM-based platforms.

EXPERIENCE

Embedded Engineer Jan 2022 - Present
eInfochips - An Arrow Company *Ahmedabad, Gujarat*

- Implemented a V4L2 sub-device driver for the Honeywell CMOS sensor on Linux kernel (v5.10) for i.MX6Quad. Supported Y8_1X8 format at 832×640, 30 FPS. Integrated with IPU CSI via Media Controller framework.
- Modified FUSB307B EVB firmware to handle USB PD events, configured Sink mode, and executed power role swaps. Verified operation on Android tablets.
- Migrated OS from PetaLinux to Yocto by generating bootloader, kernel images, and root file systems. Integrated vendor-specific meta layers.
- Resolved ping packet loss in Ethernet PHY connected with FPGA, reducing packet loss to under 5%.
- Interfaced Ethernet switch with i.MX8M and created kernel snap packages for Canonical Linux.
- Enhanced USB driver in Yocto and implemented a C++ application to capture/process raw data on the i.MX8M Plus carrier board.
- Performed STM32 bring-up by configuring USB, UART, and Ethernet interfaces to validate board functionality.
- Contributed to Android app performance tuning using NDK and JNI. Added features that improved responsiveness by 20%.
- Led an IoT-based home automation project using STM32L4 with MQTT and Node-RED dashboard. Improved appliance monitoring and reduced decision time by 30%.

PROJECTS

Simulation of CPU Scheduling Algorithms

- Programmed preemptive and non-preemptive scheduling algorithms using advanced data structures.
- Analyzed waiting and turnaround times with accuracy up to two decimal places.

MiniMIPS Assembler and GUI Simulator

- Designed an assembler and GUI simulator for the miniMIPS processor.
- Supported 19 R-type, I-type, and J-type instructions for instruction-level emulation.

Other Projects

- Engineered a real-time filter application using OpenCV, Tkinter, and NumPy.
- Created a responsive portfolio website using HTML, CSS, JavaScript, and Bootstrap 4.

EXTRA-CURRICULAR ACTIVITIES

- Served as Joint Secretary of the Electronics and Communication Organization (ECO), 2021 board. Coordinated technical and non-technical events across the department, resulting in a 25% rise in student participation.

HONORS AND AWARDS

- Recipient of the Core Value Award from eInfochips - An Arrow Company. Acknowledged for unwavering dedication and substantial contributions leading to the timely completion of projects.
- Awarded Best Project Award from eInfochips - An Arrow Company, recognized for achieving process compliance, execution efficiency, and demonstrating team spirit.