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EMPLOYMENT

Software Development Engineer **Cisco Systems, Inc** **Mar 2021 - Present**

Cloud - Data Center - IP Forwarding - Cisco NX-OS - N9K Ethernet Switches

- Developed MPLS label, IPv4 & IPv6 route consistency checkers in Layer 3 forwarding architecture to maintain consistent labels and routes between control plane tables, and platform(Fretta ASIC) tables in data plane of Nexus 9000 switches.
- Developed a binary logging mechanism for user space drivers of Jericho, CloudScale, Tahoe network hardware. Achieved a 10x lesser memory usage, and 2x faster logging speed as compared to the legacy event-loggers.
- Developed unit tests, integration tests, code coverage tests using pyATS i.e., a python3 based network automation framework.
- Actively participated in code reviews, static analysis, design specification, and test specification reviews.
- Reproduced, analyzed, and fixed QA bugs & customer found defects in L3 networking stack.
- Presented tech talks on L3 forwarding components to groups of 30+ engineers.

SKILLS USED: C; Python; System programming; Embedded Linux; Wind River Linux; Device Drivers; Networking; Operating Systems;

Embedded Software Engineer **NXP Semiconductors** **Apr 2019 - Dec 2020**

Embedded SIM - System on a chip - ARM Cortex - RTOS

- Developed Junit test suite for T=0 & T=1 Communication Protocol Stack for smart card chipsets to communicate with off-card device (modem in smartphone).
- Developed real time use cases in the form of Java-card applets and Junit tests and created eSIM test frameworks. Upgraded the same as new features added into the product.
    - UICC Terminal Interface: Command dispatching & File operations
    - USIM: Remote File & Application Management Over-the-Air (OTA)
    - GSMA Remote SIM Provisioning
    - UICC API, SIM API, and Toolkit API
- Developed test scripts for the extended logical channels to communicate with MNO servers.
- Demonstrated working knowledge of cryptographic libraries & encryption standards such as AES, DES, ECC, SHA-1, SHA-256, etc.
- Prepared golden chip samples to get the product certified by standard bodies, and to ship them to handset manufacturers and to MNOs for live/field testing for each sprint release.
- Performed validation of live OTA deployments of JCOP RTOS into the remote mobile equipment and live eSIM phone call testing.
- Performed Pre-silicon validation on FPGA emulators before tape-out.

SKILLS USED: C; Java; Scripting; Embedded Systems; Automation; Debugging; OTA live updates; Cellular eSIM technology; ARM eval boards; Raspberry pi;

TECHNICAL SKILLS

- C; Java; C++ STL; Scripting; Data Structures; Algorithms; OOP; Junit;
- Linux; System Calls; IPC Mechanisms; Signals; Interrupts; Device Drivers;
- Embedded Platforms: System on a Chip (ARM Cortex M4); PIC16F877A; RTOS;
- Unit testing; Integration testing; Automation; Agile; Scrum;

TECHNICAL EXPERIENCE

Title	**PCD Platform Driver** [Github link]
Project Brief	A device driver that is part of the kernel but do not correspond to any hardware device in the machine. The main features of this driver are a. It provides callbacks for the user application to interact with the devices and hence the application can perform operations such as read, write, etc. on the devices. b. Create multiple nodes or instances of the device. c. Exports sysfs attributes to the user space via kernel file system.
Technologies Used	File operations, pointers, structures, bitwise operations, function pointers, command line arguments, Linux system calls, Linux kernel APIs.
Key challenges & learnings	✓ Identifying and understanding of kernel APIs to export driver information to the user space. ✓ Faced challenges during initialization of multiple device instances. ✓ Faced challenges while compiling Linux kernel source tree and setting up build environment.

Title	**Wisconsin Shell** [Github link]
Project Brief	Aim is to implement a Unix shell by using System calls and IPC mechanisms like signals. It will also handle special keyboard actions (ex: Control C), can be extended for advanced functionalities (ex: Command history) as well.
Technologies Used	Linux Kernel System Calls, IPC, Concurrency; String pointers & parsing.
Key challenges & learnings	✓ Faced challenges during the implementation of redirection operators for writing at EOF and at position 0. ✓ Identification and understanding of various system calls.

EDUCATION

CHENNAI, TN **ANNA UNIVERSITY** **JUN 2014 - MAY 2018**

- Bachelors in Electronics and Communication Engineering, May 2018.
  CGPA: 7.51 (3.3/4.0)
  12th Grade: 87.41%
  10th Grade: 83%

OTHER SKILLS, INTERESTS AND RECOGNITIONS

- President & VP Education of Cisco-Vani Toastmasters Club, Cisco.
- Outdoor games: Runner up, Annual Volleyball tournament at NXP.
- Won Skill Summit competition organized by Anna University.
- Topper of the state in Dravidian literature, grade 12, academic year 2014.
- Always stood as the topper of class and school from childhood.
- Played parts & characters in stage and theatrical plays [150+]