

# RAKSHITH PRAKASH

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## Technical Skills

**Programming Languages:** C, C++, Python, Bash.

**Developer Tools:** Comfortable working with terminal. Git, SVN, Gerrit, Ctags-Cscope, tmux, Yocto Tool-chains and Cross-compilers, Wireshark, Docker Containers

**Technologies:** Linux Kernel Modules, nl80211-cfg80211, \*nix based systems, Yocto, Buildroot, Ansible, Docker, AWS, Virtualization, QEMU

**Hardware:** ARM processors, Computer Architecture, PCIE, SDIO, exp with i.MX ,RaspberryPi, Jetson platforms

**Other Skills:** TCP/IP, HTTPS,VPNs, Wireguard, OVPN, Devops

## Experience

### Infineon Technologies. (part of Cypress Semiconductor acquisition)

Bangalore

Currently Senior Application Engineer (Full time starting Jul '21)

Jan 2021 – Present

- Part of the Linux-WiFi team specializing in Broadcom IoT WiFi product line
- Developed tailored code solutions to address specific customer requirements. Debugged reported issues and developed fixes.
- security concerns related to 802.11 Authentications, 4-Way handshakes, WPA3 SAE, 802.11ax, GTK rekey, and other security protocols.
- Worked on a wide variety of issues, including 802.11 Roam, Scan, Authentication, 4WHS, GTK rekey, WPA3 SAE, 802.11ax. Debugged kernel crashes
- Utilized WireShark to capture and analyze 802.11 packets
- Dockerized the application compilation process, streamlining the generation of static and dynamic linked binaries for arm32, arm64, and x86 platforms.
- Added FMAC driver support to display packet statistics info with ethtool.
- Customized firmware as per customer requirement.
- Developed comprehensive documentation, Knowledge Base Articles (KBA), and example configuration files.
- Ported Fragment and Forge vulnerability CVE fixes to different WiFi devices.
- Part of EV demo project. Architected the AWS Cloud Infrastructure for an Electric Vehicle monitoring app.
- Utilized AWS IoT Core and MQTT messaging for real-time data transmission.
- Leveraged AWS Amplify for simplifying front-end development and integrating with DynamoDB.
- Developed serverless functions using AWS Lambdas for processing and analyzing EV data.

## Projects

### Personal Home Lab - My self hosting setup | Proxmox, Docker, VMs, Samba, Graphana, Plex, PiHole

January 2020

- A laptop repurposed to be used as a server, running Proxmox as a hypervisor.
- I use the server to learn and experiment with new technologies and practice new skills.(Networking, Linux, Virtualization etc)
- I use a static IP subscription from the ISP to expose services to the internet. I also use Cloudflared tunnels for https service
- Some examples of services running on the server are: Samba file server, Plex, MQTT, Home Assistant, Influx DB, Graphana, PiHole DNS.

### Autonomous Mobile Robot | ROS Noetic, Intel NUC10, Teensy4, LiDAR, Intel RealSense

December 2020

- Robot which can navigate autonomously from point to point using SLAM
- Developed low level code for the Teensy4 to control the motor drivers, process the wheel encoder data, and communicate with the Intel NUC over serial communication.
- Developed high level hardware Interface package for ROS to communicate with the Teensy 4.

### Scalable Vitals Monitoring System | Node.js, Express.js, NodeRed, InfluxDB, Python, OpenCV, RPI4

October 2020

- Designed the hardware and software components of a Human vitals monitoring system
- Used RPI, openCV to scan QR code, sensors to measure Vitals and process the data at a remote , self-hosted server.
- Stored the history of data in InfluxDB, designed APIs and frontend application to visualize the data.

## Education

### BMS College Of Engineering.

2017 – 2021, Bangalore

B.E in Electronics and Communication

CGPA 8.41/10

### Vijaya Composite Pre-University College

2017, Bangalore

Class 12

92 %

### Vijaya High School

2015, Bangalore

Class 10

94.24 %