RAJESH KUMBHAKAR

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Skills

- Embedded Systems
- Linux
- RTOS
- FreeRTOS
- Yocto
- Linux Device Drivers
- GIT
- Embedded C
- Peripheral Drivers
- STM32
- ESP32
- ESP-IDF
- LVGL
- DVP/SCCB
- USB
- Linux Kernel
- JTAG
- Segger SystemView
- Open source project development & management
- Hardware Evaluation
- Debugging proficiency
- Data structures

Objective

I aspire to be a embedded firmware developer mainly around Embedded Linux/Linux Kernel, it has been my goal for quite sometime and I have been working my way towards my goal. I have a passion towards Embedded Linux, Device Drivers, ROTS and Firmware. I Belief in self-learning & team work. Recognized consistently for quick adoption and innovative solution to challenging problems in real world applications, specially targetting Consumer embedded devices.

Experience

Episodic Labs Pvt. Ltd. *Sept 2020 - Apr 2021*

Firmware Engineer

- Consumer Electronics.
- Work-from-home.
- Worked on Camera-based applications based on FreeRTOS in ARM and ESP32 MCUs and technologies including DCMI, SCCB, DVP, etc.
- Responsible to identify potentialá requirements & supported technologies for the product.
- Responsible for Cost, Power & Memory analysis of the system.
- Responsible for Embedded System & Firmware design, development and debugging.
- Working on the development of BEMRR- A smart video analysis device, for sports.
- Responsible for design and platform identification.

DATOMS | Pheonix Robotics Pvt. Ltd. *08/2021 - Current*

Embedded Systems Engineer - Intern

- Working on embedded software stack.
- Technologies including LVGL GUI framework, and driver development.
- Responsible for embedded GUI development & sensor interface.

Interests

- Consumer Electronics
- Open source
- Linux kernel
- Embedded systems
- RISC-V

Language

- Hindi
- English
- Bengali

Education

St. Xavier's Inter College *2017*
Intermediate in Science
69.4%

KIIT Deemed To Be University *2022*
B.Tech in Electronics & Telecommunications
8.10 CGPA (6th Semester)

Projects

Health Fit Smartwatch
Worked on full stack Firmware development & system design of the Smartwatch, part of an E-Health Monitoring System for IICDC-2019.

E-Health Monitoring System (11/2019 - Present)
Winner (TOP-60) of the ongoing Indian Innovation Challenge and Design Competition 2019 by DST & Texas Instruments. A low-cost IoT based Health monitoring system aimed to reduce the gaps and increase the medical facilities anytime anywhere.

Smart IoT Camera Node (09/2020 - 04/2021)
A smart camera system which can keep track of a user and it's activities.

WearIn - Wearables for India (08/2020 - 01/2021):
Wearables, based on RISC-V based SHAKTI and VEGA processors

Minimal STM32F446RETx MCU HAL & Driver Libraries(05/2020 - Present)
HAL & Driver Package form scratch for STM32F446RETx Microcontroller. Drivers for: GPIO, I2C, SPI, UART, RCC etc.

Portable Digital Camera (02/2021 - Present)
A consumer ready, proof-of-concept Digital Camera based on STM32F7 MCU & OB5640AF CMOS Camera

Achievements & Awards

- Winner (TOP-60) : IICDC-2019

Publication

- **Author: Pratik Ghosh, Sourav Das, Rajesh Kumbhakar, Rohit Yadav, Shubham Saxena, Roushan Kumar and Nirmal Kumar Rout - An E-Health Monitoring System**
  Electronic devices, circuits and systems for biomedical applications 1st edition. 2021.