



# 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, RTOS 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 -

Firmware Engineer

Apr 2021

- 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 potential 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.

## 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)

## ♥ Interests

Consumer Electronics  
Open source  
Linux kernel  
Embedded systems  
RISC-V

## 📖 Language

Hindi  
English  
Bengali

## 🔦 Projects

- **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.