Rajesh Kumbhakar

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+919931616662
sssraj.sssraj@gmail.com

www.linkedin.com/in/rajssss

Objective

Rajesh is a self-taught embedded software engineer, having hands-on experience on multiple platforms especially on Espressif, STM32, NRF Microcontrollers. He has demonstrated experience in embedded GUI development & implementation, having very good debugging, system analysis, and code management experience with industry-leading tools and platforms Although he works in the area of embedded software, his views are always around the end-to-end product development cycle including system design. He is very much interested in consumer electronics, and developing firmware that runs on embedded devices designed for consumers. He also has knowledge and experience in Embedded Linux (Yocto) and Linux kernel development. He is a long- time believer and contributor to opensource community works and contributed to many opensource projects. He is also known for his time- bound, effective and innovative ideas among his connections.

Experience

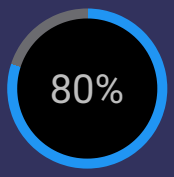
- Associate Engineer — 09/2022 - Present
  Qualcomm
  - Working under Target Stability and Debug Team
  - Responsible to debug stability testing issues and provide debug support to various teams across Qualcomm through Ramdump analysis and Live debug
  - Tools including Trace32, JIRA, and multitude of Qualcomm internal tools
- Embedded System Developer — 03/05/2022 - 04/08/2022
  DATOMS | Pheonix Robotics Pvt. Ltd.
  - Worked on DG monitoring solution, Firmware Development for multiple target devices
  - Worked on Pollution monitoring solutions, Firmware Development for multiple devices, supporting ISO7168
  - Developing moduler & universal firmware for all different target devices
- Embedded Systems Engineer - Intern — 08/2021 - 05/2022
  DATOMS | Pheonix Robotics Pvt. Ltd.
  - Working on embedded software stack on multiple projects.
  - Responsible for complete embedded GUI development and implementation.
  - Responsible for porting/developing drivers of various sensors/devices for ESP-IDF.
  - Responsible for complete ISO7168 standard packet internface and generation, including AES256 encryption & Compression.
  - Responsible fir developing custom protocols & middlewares for multiple Industrial air quality analyzers supporting custom protocols.
  - Responsible for code improvements & bug fixing in existing code base.
- Firmware Engineer — 09/2020 - 04/2021
  Episodic Labs Pvt. Ltd.
  - Worked on Camera-based applications based on FreeRTOS in STM32 and ESP32 MCUs and technologies including DCMI, SCCB, DVP, etc.
  - Responsible to identify potential requirements & supported technologies for the product, Hardware & Software BOM.
  - Responsible for Cost, Power & Memory analysis of the system.

- Responsible for Embedded System & Firmware design, development and debugging.
- Worked on the early development of BEMRR- A smart video analysis device, for sports.

Education

- Intermediate in Science — 2017
  St. Xavier's Inter College
  69.4%
- B.Tech in Electronics & Telecommunications — 2022
  KIIT Deemed To Be University
  8.27

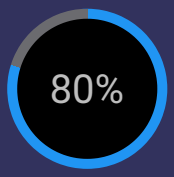
Skills



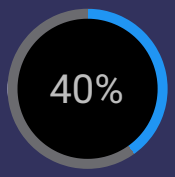
Embedded Systems

Linux

RTOS



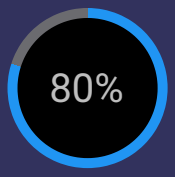
FreeRTOS



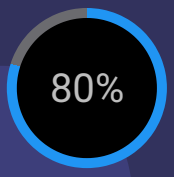
Yocto

Linux device drivers

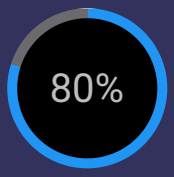
Linux Kernel



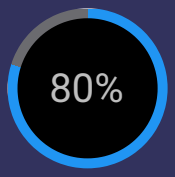
GIT



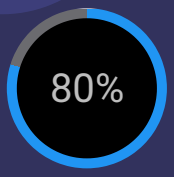
Embedded C



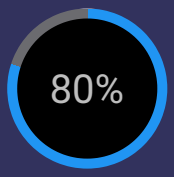
Peripheral Drivers



STM32

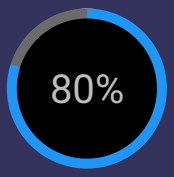


ESP32



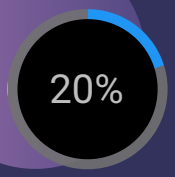
ESP-IDF

LVGL

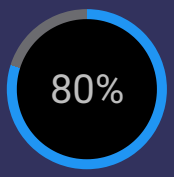


Embedded Filesystems (SPIFFS, LittleFS)

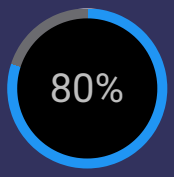
DVP/SCCP



USB



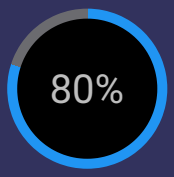
Ramdump Debugging



Trace32

JTAG

Segger SystemView



Opensource Software development and management

Debugging Proficiency

Data Structures

Projects

- Portable Digital Camera (02/2021 - 03/2022)
  Proof-of-Concept Digital Camera based on STM32F7 MCU & OB5640AF CMOS sensor
- 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 - 02/2022)
  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.
- 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 - 07/2021))
  HAL & Driver Package form scratch for STM32F446RETx
  Microcontroller. Drivers for: GPIO, I2C, SPI, UART, RCC etc.

Achievements & Awards

- Winner (TOP-60) : IICDC-2019

Publications

- 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.

Languages

- Hindi

- English
- Bengoli
- Odia

Personal Details

- Nationality : Indian