

Preenu Ann Ponnachan

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Based in the UK | Open to Remote Roles | No sponsorship required

PROFESSIONAL SUMMARY

Embedded Software Engineer with 3+ years of experience in C and 1 year in C++ (Qt), specializing in embedded systems development across STM32 and Linux platforms. Skilled in RTOS (FreeRTOS), driver development, hardware interface protocols (SPI, I2C, UART), multithreading, IPC, and Makefile-based build systems. Hands-on experience with DACs, button interfacing, GPIO, and serial tools like Tera Term. Actively upskilling in Modern C++. Seeking roles focused on embedded product development and system-level programming.

PROGRAMMING SKILLS

- **Languages:** C, C++, Embedded C, (Python – academic exposure only)
- **Frameworks & APIs:** Qt (GUI, signals/slots), IPC (pipes, shared memory, semaphores), multithreading
- **Platforms & OS:** STM32, FreeRTOS, Linux
- **Tools:** Git, SVN, Bitbucket, Jira, cppCheck, GDB, Valgrind, Redmine, TestRail
- **Peripherals:** SPI, I2C, UART, GPIO, DAC, Timers, ADC
- **Build Systems:** Makefile, CMake (learning)
- **Database:** SQLite

EDUCATION

- **University of Hertfordshire, Hertfordshire, UK**
Master of Science in Data Science and Analytics 2021 -2022
Relevant Modules Studied: Neural Networks and Machine Learning, Foundations of Data Science, Data Mining
- **Mahatma Gandhi University, Kerala, India**
Master of Technology in Advanced Communication and Information Systems; Distinction 2014 –2016
- **Mahatma Gandhi University, Kerala, India**
Bachelor of Technology in Electronics and Communication; Distinction 2010 –2013

EXPERIENCE

Eaton MTL

Software Engineer, August 2022 – June 2023

- Implemented Direct Digital Synthesis (DDS) on STM32 microcontrollers to generate audio tones for various applications and used oscilloscope to test, analyze, and refine DDS outputs for optimal performance.
- Created a Python script to automate power control of a hardware device via smart plug.

Gadgeon Systems Inc

Software Engineer, May 2020 - Dec 2020

- Worked on embedded firmware development tasks for key customer projects.

- Involved in development of device driver firmware development for sensors and peripherals in STM32 microcontroller platform using STM32 HAL.
- Programmed communication interfaces including SPI, I2C, UART, integrating with various onboard peripherals.
- Involved in firmware application development using embedded freeRTOS, including button interfacing via GPIO with debouncing logic..
- Used ST-Link/JTAG for on-chip debugging and firmware flashing.
- Used Tera Term for serial communication testing, command-based debugging, and logging.
- Did POC on LoRaWAN, Cantata, SonarQube as requested by the client.

Inntot Technologies

Software Engineer, Aug 2018 - Mar 2020

- Designed and developed Internet Radio software, integrating SQLite and third-party libraries (mpg123, FDK AAC).
- Utilized C and C++ with Qt for DAB GUI application development and debugging.
- Deployed IPC mechanisms like shared memory, pipes, and semaphores for embedded systems.
- Conducted unit testing and integration on Raspberry Pi platforms.

KEY ACCOMPLISHMENTS

- Presented a technical paper at IEEE ICCES 2016, demonstrating expertise in communication and electronics systems.
- Former IEEE member; led multiple technical and cultural event teams
- Secured a score of 442 in Graduate Aptitude Test in Engineering (GATE) 2014.

CAREER BREAK

- Maternity Leave: June 2023 – June 2024 and then resigned
- Currently actively upskilling in Modern C++ focusing on advanced features, templates, and STL containers.