

Yoganath Prabhakar

ECE Engineer | Microcontroller Enthusiast | Seeking Dynamic Role in Embedded Systems Development

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EXPERIENCE

- Embedded Platform - Graduate Engineer Trainee** Oct 2023 - Present
MBit Wireless Pvt. Ltd. | Chennai On-site
 - Actively advancing **Embedded C** programming skills as an intern, primarily focused on designing and debugging **embedded systems drivers**.
 - Specializing in the development of **UART** and **Shared Peripheral DMA** device drivers for embedded systems, and seamless collaboration with **RTL SOC** and **verification** teams during design and testing phases.
 - Proficiently utilizing **Linux servers** and **SVN** for efficient version control and collaborative development processes in the field of **embedded systems**.
 - Contribute significantly to both unit and integrated testing on **FPGA/ASIC boards**, ensuring comprehensive **validation of driver** functionality in real hardware environments for embedded systems.
 - Apply a proactive **problem-solving** approach to troubleshoot technical issues within embedded systems, demonstrating a commitment to resolving challenges.
 - Play a pivotal role in the ongoing development and refinement of embedded systems **device drivers**, with a focus on prioritizing reliability and stability in the embedded systems landscape.
- Electronic Design & Firmware Development - Internship** Mar 2022 - Mar 2023
Atal Incubation Centre PEC Foundation | Puducherry Hybrid
 - This internship laid a solid foundation for my role as a junior **embedded system engineer**, providing **hands-on experience** in project leadership and innovation.
 - Successfully implemented a POC using **Raspberry Pi Zero** with a **Ublox NEO6M GPS** and a **Simcom SIM7600 LTE module**.
 - Transitioned smoothly from POC to prototype, designing and prototyping a device with **ESP32S3 MCU** and **Quectel BG600L-M3 LTE GNSS module**, showcasing expertise in **embedded hardware** and **PCB design**.
 - Advanced the project by developing a universal PCB schematic for the **Quectel BG600L-M3 LTE GNSS module**, ensuring compatibility with any **MCU**.
 - Explored the **STM32 L4 MCU**, **MIPI DSI**, and **CSI interfaces** as part of a comprehensive plan for integrating the **STM32 L4 MCU** into the project's next phase, providing valuable insights and recommendations for advancement before concluding my internship.

PERSONAL PROJECTS

- Implementation of a scanner for real-time 3D target** Feb 2023 - May 2023
Designed and developed a low-cost 3D scanner for art and craft, reverse engineering applications.
 - Accurate 3D modeling achieved at a **low cost** using a **Time-of-Flight Infrared Laser Distance Sensor**.
 - Non-contact laser device accurately transforms physical object shapes into CAD data, generating detailed point clouds for size and shape representation.
 - Hardware Used:** ESP32, 128x64 GLCD Display, A4988 Driver, ToF Sensor(Infrared Laser Distance Sensor).
 - Software used:** Arduino IDE, MatLab, MeshLab.
- Design and Implementation of Surveillance MiniBot** Nov 2022 - Jan 2022
Developed a compact Wi-Fi camera-equipped surveillance robot
 - Engineered a **compact 50x45x45 mm surveillance robot** with **smartphone-controlled capabilities**, optimizing disaster scenario monitoring.
 - Hardware used:** ESP32, DRV8833, Camera (OV2640)
 - Software used:** Arduino IDE, Web-Socket, HTML, CSS, JS

EDUCATION

- Bachelor of Technology in Electronics & Communication Engineering** 2020-23
Puducherry Technological University, Puducherry CGPA: 8.35/10
- Diploma in Electronics & Communication Engineering** 2017-20
Motilal Nehru Govt. Polytechnic College, Puducherry Percentage: 89/100

TECHNICAL SKILLS AND INTERESTS

Programming Languages: Embedded C/C++, Python, Verilog

Hardware Platforms: Arduino, ESP32, Raspberry Pi, STM32, Sensors & Actuators

Communication Protocols: UART, SPI, I2C

Software Tools: VSCode (PlatformIO), STM32CubeIDE, Altium Designer, Xilinx ISE 14.7, Onshape/Fusion 360

Areas of Interest: Embedded Systems, VLSI

Soft Skills: Problem Solving, Self-learning, Presentation, Adaptability

Hobbies: Mobile & Laptop Hardware/Software Servicing, Circuit Troubleshooting, Gadgets Servicing, DIY Gadgets