

AKHIL C

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About Me

Embedded Software Engineer at **Norsecom** with experience in building laboratory automation and industrial control systems. Currently focused on building controllers for lab equipment and smart gateways for meter reading. Passionately pursuing growth in **Embedded AI and Edge Computing**. I value teamwork, solving practical hardware problems, and building reliable systems.

Skills

Embedded & IoT: C++, ESP32-S3, Arduino, RTOS, **PlatformIO**, **SquareLine Studio**, M-Bus, OpenCV.

Future Growth Areas: **Embedded AI**, Machine Learning for IoT, Smart Industrial Systems.

Tools & Protocols: **Qt/QML**, Python, UART, I2C, SPI, DMA, Git, Linux, VS Code.

Personal: Hardworking, Team Player, Problem Solver | **Hobbies:** Cricket.

Work Experience

Embedded Software Engineer | Norsecom (Trivandrum) August 2025 – Present

- Developing firmware for laboratory equipment (Spin Coaters, Centrifuges) using **ESP32-S3 and Arduino**.
- Built custom **C++ ProfileManager** with RAIL-based data persistence for secure profile storage.
- Achieved smooth 60FPS UI performance on 4.3" LCDs using **Zero-Tear** display logic (16-bit bus, double buffering).
- Developed and deployed 5+ production-grade **M-Bus gateways** on Raspberry Pi for automated water meter reading.
- Engineered a pH Meter monitoring system with real-time data logging and automated sensor calibration protocols.

Web Development Apprentice (Laravel) | Keltron 8-Month Apprenticeship

- Developed backend modules for web applications using **Laravel** and **MySQL**.
- Worked on fixing bugs, testing, and adding features to internal company systems.

Technical Projects

Software & 3D Visualization

- AMBU M-Bus Gateway:** Optimized an asynchronous Raspberry Pi-based reader using a **Universal M-Bus protocol** (79-byte custom frame) for high-precision data extraction.
- Diagnostic Tool:** Developed a cross-platform desktop application using **Qt/QML** for system testing and diagnostics.
- 3D Portfolio:** Created a cinematic digital experience using **Three.js** and cinematic animations to showcase web-embedded 3D graphics.
- Alzheimer's Assistance System:** Built a healthcare companion using **Python, OpenCV, and Google Assistant API** featuring real-time GPS tracking and facial recognition.

Certifications & Achievements

- HiveMQ MQTT v3.1.1 Professional Training:** Certified in industrial IoT communication protocols.
- Cisco: Introduction to IoT:** Certified in IoT ecosystem design, Python for IoT, and machine learning fundamentals.
- HackerRank Python (Basic):** Verified skills in core Python programming and problem-solving.
- Award:** Recognized for **UI Performance Innovation** at Norsecom for fixing high-refresh-rate screen flickering issues.

Education

B.Tech in Computer Science and Engineering | Valia Koonambaikulathamma Engg College Passed: 2025

First Class with Distinction (Trivandrum, Kerala)

Diploma in Computer Hardware Engineering | GPTC Attingal Passed: 2020

First Class (Government Polytechnic College)