

CAROLINE PREM LEELA

Senior Full Stack Developer / Embedded Systems Specialist

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Location: Madurai, India

PROFESSIONAL SUMMARY

Results-driven Full Stack Developer and Embedded Systems Specialist with 6+ years of progressive experience across IoT, automotive, and industrial sectors. Successfully led multidisciplinary teams and delivered 75+ high-impact projects from concept to completion. Expert in EV charging infrastructure, web/mobile applications, and embedded solutions with a proven track record of optimizing performance, reducing costs, and accelerating development cycles. Passionate about creating innovative, scalable technical solutions that solve complex business challenges.

CORE COMPETENCIES

- **Software Development:** Full-stack web development, Embedded programming, API design, Mobile applications
- **Hardware Integration:** Microcontroller programming, Protocol implementation, System design, Circuit testing
- **Team Leadership:** Project management, Cross-functional collaboration, Mentoring, Technical documentation
- **Business Impact:** Cost reduction, Performance optimization, Process automation, Technology modernization

TECHNICAL EXPERTISE

- **Languages:** Embedded C, C, C++ (6 years), Java (3 years), PHP (3 years), Python (1 year), Assembly (1 year), HTML, CSS, JavaScript
- **Mobile & Web:** Android Development, RESTful APIs, Responsive design, Single-page applications
- **Servers & Databases:** MySQL, DBMS (6 years), Cloud Servers (6 years), AWS (2 years), Dedicated Servers (1 year)
- **Tools & Environments:** Qt, MP-Lab, Proteus, KEIL micro Vision, Android Studio, Atmel Studio, CCS
- **Protocols & Communication:** RS232, RS485, SPI, I2C, CAN, MODBUS, OCPP1.6J, ETHERNET IP, MQTT
- **Hardware & Controllers:** Atmel, Analog Devices, Nuvoton, Texas Instruments, Microchip, NXP, Raspberry Pi
- **DevOps & Management:** Git, CI/CD, Linux, Windows, iOS, RTOS, Slack, Agile methodologies

PROFESSIONAL EXPERIENCE

Full Stack Developer / Project Manager

Tuckermotors Private Limited, Madurai | February 2020 - May 2024

Led end-to-end development and implementation of EV charging infrastructure solutions, managing cross-functional teams and ensuring seamless integration between hardware and software components.

Key Achievements: - Architected and implemented complete OCPP Protocol integration for server and hardware systems, enabling real-time communication between charging stations and management software - Developed robust CMS platform that increased operational efficiency by 40% and improved user experience for station operators - **API Development:** Created comprehensive payment integration systems that processed 10M+ in transactions with 99.9% uptime - **Mobile Applications:** Designed and launched Android applications with 15,000+ downloads on Google Play Store - Successfully integrated multiple EVSE protocols (CCS2, GBT, ACTYPE2) ensuring compatibility across different EV models - Implemented secure payment gateway solutions (RAZORPAY, PAYTM) with multi-level authentication - Optimized AWS cloud infrastructure, reducing hosting costs by 25% while improving system performance

Embedded Systems Engineer / Team Lead

Firstcall Automation Private Limited, Madurai | July 2018 - February 2020

Rapidly advanced to leadership position, overseeing database administration, web hosting, and EVSE development initiatives while driving innovation in embedded systems.

Key Achievements: - Promoted within first year to Team Lead role, managing database operations and spearheading EVSE development - Conducted comprehensive R&D, protocol testing, and feasibility studies that informed strategic product development decisions - Developed custom alternatives to third-party solutions for solar SCADA systems, reducing operational expenses by 35% - Delivered critical AMF project within one week of joining, resulting in immediate 50% salary increase - **Major Projects:** - SCADA Control Systems: Design verification, programming, and implementation for industrial applications - Electrical Systems: Created VFD and AMF solutions that improved reliability by 60% compared to previous systems - IoT Implementations: Designed home and building automation solutions using multiple communication protocols

PROJECT PORTFOLIO

EV Charging Infrastructure & Energy Management

- **Complete Charging Station Solutions:** Developed comprehensive hardware-software ecosystem for EV charging networks, including station controllers, energy monitoring systems, and user interfaces
- **Mobile Application Suite:** Created and maintained user-friendly Android applications for EV charging management:
 - Tucker OCPP - Station monitoring and control
 - FataFat - Fast charging network application
- **API & Backend Systems:** Designed scalable server architecture handling 1000+ simultaneous connections with optimized database queries
- **Protocol Implementation:** Successfully integrated industry-standard protocols enabling interoperability across charging networks

Industrial Control Systems & Automation

- **Advanced Control Systems:** Engineered reliable control solutions for critical industrial equipment, reducing downtime by 40%
- **PLC Programming:** Implemented logic controllers for manufacturing equipment, optimizing production processes
- **SCADA Development:** Created custom Qt-based monitoring and control software for real-time industrial supervision
- **Energy Monitoring:** Developed precision measurement systems for industrial power consumption analysis

Connected Systems & IoT Solutions

- **Building Management Systems:** Designed comprehensive building automation solutions controlling HVAC, security, and energy systems
- **Attendance & Access Control:** Implemented RFID-based systems for secure facility access and attendance tracking
- **Remote Monitoring Networks:** Created IoT device networks with cloud connectivity for distributed sensing applications

EDUCATION

- **B.E. Electronics & Communication Engineering** - 74%, Anna University
P.A. College of Engineering and Technology, Pollachi (2014-2018)
- **HSC (12th)** - 82%, State Board
Sri G.V.G Visalakshi Mat.Hr.Sec.School (2013-2014)
- **SSLC (10th)** - 91%, State Board
Sri G.V.G Visalakshi Mat.Hr.Sec.School (2011-2012)

PROFESSIONAL DEVELOPMENT

- **Java & SDLC Fundamentals** - Great Learning (2024)
- **Infosys Campus Connect** (Web Development) - Infosys Limited (2017)
- **Python Programming** - P.A. College of Engineering (2017)
- **Embedded Systems** - P.A. College of Engineering (2016)

COMMUNITY ENGAGEMENT

- **St. George Church Chorister** (2007-Present)
- **CSI Christ Church Chorister** (2010-2021)

AWARDS & RECOGNITION

- **Best Support Engineer Award** (2023) - Recognized for exceptional technical support and customer satisfaction
- **COVID Innovation Recognition** - Led critical product development during pandemic restrictions
- **Technical Excellence Award** - Acknowledged for solving complex technical challenges across multiple domains

PUBLICATIONS

- “Vehicle Control System Implementation using CAN Protocol” - International Journal of Engineering Research & Technology (April 2018)

LANGUAGES

- English (Professional)
- Tamil (Native)
- Hindi (Intermediate)
- Japanese (Beginner)