

Dr. S. Madhavapandian

Embedded Technology Specialist
Univision Systems and Solutions

✉ madhavapandian@univisiontechnocon.com

☎ +91 – 99444 74026



Academic & Industry Profile

Dr. S. Madhavapandian is a leading expert in Embedded Systems and IoT technologies with over **14 years of experience** in industry and academic collaboration. He holds a **Ph.D. in Electrical Engineering** from **Anna University, Chennai**, and brings a strong blend of academic excellence and real-world engineering practice in embedded system design, secure networking, and protocol development.

In his role as **Embedded Technology Specialist** at **Univision Systems and Solutions**, he not only spearheads innovation in embedded architecture and product development but also plays an active role in knowledge sharing and academic collaboration. He has **trained over 7000+ engineering students** across India through workshops, seminars, and hands-on embedded system boot camps. Additionally, he has conducted numerous **Faculty Development Programs (FDPs)** focused on emerging technologies such as Embedded Linux, RTOS, IoT, and AI for edge computing—helping academic institutions bridge the gap between curriculum and industry.

His technical expertise covers a wide range of domains including **firmware, device drivers, low-level programming, RTOS (FreeRTOS, TI-RTOS), Embedded Linux, Linux kernel and driver development, ARM architecture, IPv6 and 6LoWPAN protocols, and AI/ML integration for IoT edge systems.**

Core Technical Expertise

- Embedded Linux & RTOS (FreeRTOS, TI-RTOS)
 - Linux Kernel Programming & Device Drivers
 - ARM Cortex Architecture
 - Protocols: IPv4, IPv6, 6LoWPAN
 - Secure Firmware & USB Bootloaders
 - IoT Architecture and Edge ML
 - C and ARM Assembly
 - OTA
 - Academic Training & Faculty Development
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Academic Engagement

- **Trained 7000+ Engineering Students** through hands-on workshops and seminars in Embedded Systems, IoT, and AI for edge computing.
 - **Conducted Faculty Development Programs (FDPs)** for academic staff in Embedded Linux, Real-Time Systems, and Industry 4.0 domains.
 - Serves as a **Board of Studies (BoS) Member** in various engineering colleges and universities, contributing to curriculum design and industry-aligned syllabus structuring.
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Research & Development Highlights

- Developed secure **6LoWPAN IoT SDK** with RFC-compliant multicast and routing enhancements.
 - Architected **USB Bootloader** for STM32F7 with authentication and dynamic memory mapping.
 - Led driver development for **Automotive Ethernet and Camera Interfaces** supporting 4K streaming.
 - Designed and deployed **Dominar Smart Socket** with ESP8266, web configuration, and CLI support.
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Education

- **Ph.D. in Electrical Engineering** – Anna University, Chennai
 - **M.E. in Embedded System Technologies**
 - **B.E. in Electronics and Communication Engineering**
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Professional Memberships

- **Senior Member, IEEE**
 - **Member of ISTE**
 - **Member, IEEE Internet of Things Technical Community**
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Publications & Innovations

- **2 Patent Filed**
- **10+ Research Publications** in national and international journals/conferences