

Dr.Sandeep S.Chapalkar
Embedded Systems Trainer | Corporate & Academic Consultant

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Professional Summary:

Embedded Systems Trainer and Academic Consultant with 16+ years of teaching and training experience and extensive corporate training exposure to leading multinational companies. Expertise in embedded system architecture, real-time systems, microcontroller programming, and industry-oriented curriculum development.

Core Competencies:

- Teaching & Corporate Training
- Performance Monitoring & Evaluation
- Technical Mentoring
- Curriculum & Content Development
- Research & Technical Analysis
- Problem Solving & Time Management

Technical Skills:

- Programming & Software: C / C++, Embedded C, Advanced C++, Python, Shell Scripting
- Microcontroller & Architecture: 8051, MSP430, ARM Cortex Mx, Raspberry Pi, RISC-V
- Operating Systems: Windows, Linux, FreeRTOS, QNX
- Embedded & Electronics Domain: Embedded System Design, Semiconductors, Analog & Digital circuits, Communication & Networking Protocols
- Tools & Simulation: STM32CubeIDE, Keil Software, VS Code, PSpice, MATLAB / Simulink

Corporate Training Experience:

- **Key Organization Trained:**
 - **Robert Bosch** - Bengaluru, Coimbatore (50-60 days / 3-5 days programs)
 - **HCL Technologies** - Bengaluru (15 Days program)
 - **Tata Elxsi** - Bengaluru, Thiruvananthapuram (15 Days)
 - **Philips Innovation Campus** - Bengaluru (10 Days)
 - **Quest Global** - Thiruvananthapuram (50 days)
 - **ABB Group** - Bengaluru (2-3 Days)
 - **Dyashin Technosoft Pvt Ltd** - Bengaluru (30 Days)
- **Training Domain & Modules:**
 - Embedded system design concepts & system security
 - C programming
 - Linux fundamentals & Shell scripting
 - Semiconductors Concepts, Electronic Circuit & Network Analysis
 - STM32F4xx Programming using STM32Cube IDE
 - Bare-Metal Programming: GPIO, timers, interrupts, ADC, DAC, LCD
 - I2C, SPI, UART, CAN Protocols and Network protocols
 - Sensor Fusion Fundamentals
 - FreeRTOS configuration & Task Management
 - AUTOSAR Architecture & MISRA Guidelines
 - ADAS Technology

- RISC – V Architecture & SoC Concepts
- Kalman Filter based Object Tracking
- Advanced C++ (STLs, Lambdas, Functors, Boost ASIO, Design Patterns)
- Clean coding and optimization
- **Academic & Institutional Trainings:**
 - Geetam University, Bengaluru
 - C V Raman Global University, Bhubaneswar
 - Dayananda Sagar College of Engineering
 - REVA University
 - Amrutha University
- **Academic Experience**
 - **Guest lecturer**, BITS Pilani
 - **Assistant professor**, Department of Electronics & Communication Engineering Dayananda Sagar College of Engineering, Bengaluru (Jan 2010 to Mar 2022)
 - Curriculum & Content Development: Embedded System Design & Robotics, Analog Electronics, Programming in C /C++, OS, Microcontroller & Microprocessor etc.
 - **Deputy Controller of Examination (DyCoE)** for 5 years.
- **Vibrant Tech Pvt Ltd.** (July 2008 to Dec 2008)
 - Role: Techno-Commercial Executive.

Education:

- **Ph.D:** Embedded System Design, VTU, Karnataka.
- **M.Tech:** Digital Electronics and Communication, Dayananda Sagar Institute of Technology Bangalore (V.T.U Belagavi).
- **B.E:** Electronics and Communication, G.I.T, Belagavi (KUD).

Certification Courses:

- Diploma in Embedded Systems - UTL Technologies.
- C Programming and Assembly Language - IIT Madras (NPTEL)
- Introduction to Embedded System Design - IIT Madras (NPTEL)
- Introduction to Operating Systems - IIT Madras (NPTEL)
- Geospatial Inputs for Enabling Master Plan Formulation - IIRS
- Programming Fundamentals - Duke University (Coursera)
- Embedded Hardware and Operating Systems EIT Digital (Coursera).
- CoDAC - Advanced Computing (C-DAC)

International Journals:

- Effect of Frequency Scaling on Power consumption in Embedded Systems - IJECIERD-2022.
- Relative Deadline Analysis in Multitasking RTS using RM & EDF Scheduling - IJRTE-2021.
- Automatic Coffee Making Machine Using PLC - IJCRT-2020.
- Design of a Manchester Encoder for MIL-STD-1553 Applications - IJCRT-2020.
- Voice Recognition using MFCC Feature Extraction Method - IJARTET-2015.

International Conferences:

- Impact of Process Load on Real Time System Performance - ICATIECE-2019.
- Effect of Dynamic Process Load Variation on Relative Deadlines in Multitasking Embedded Systems - ICTCS 2020.

- Utilizing A Raspberry Pi for Transmitting Image Using Li-Fi Transceiver - ICICCT 2020.

Book Chapters (Springer Publication):

- Case Studies on 5G and IoT Security Issues from the Leading 5G and IoT System Integration Vendors - Springer 2021.
- Machine Learning IDS Models for 5G and IoT - Springer 2021.

Additional Information:

Address: Banashankari 2nd stage, Bengaluru- 560070.

Languages: English, Kannada and Hindi

Hobbies: Reading, Travelling.