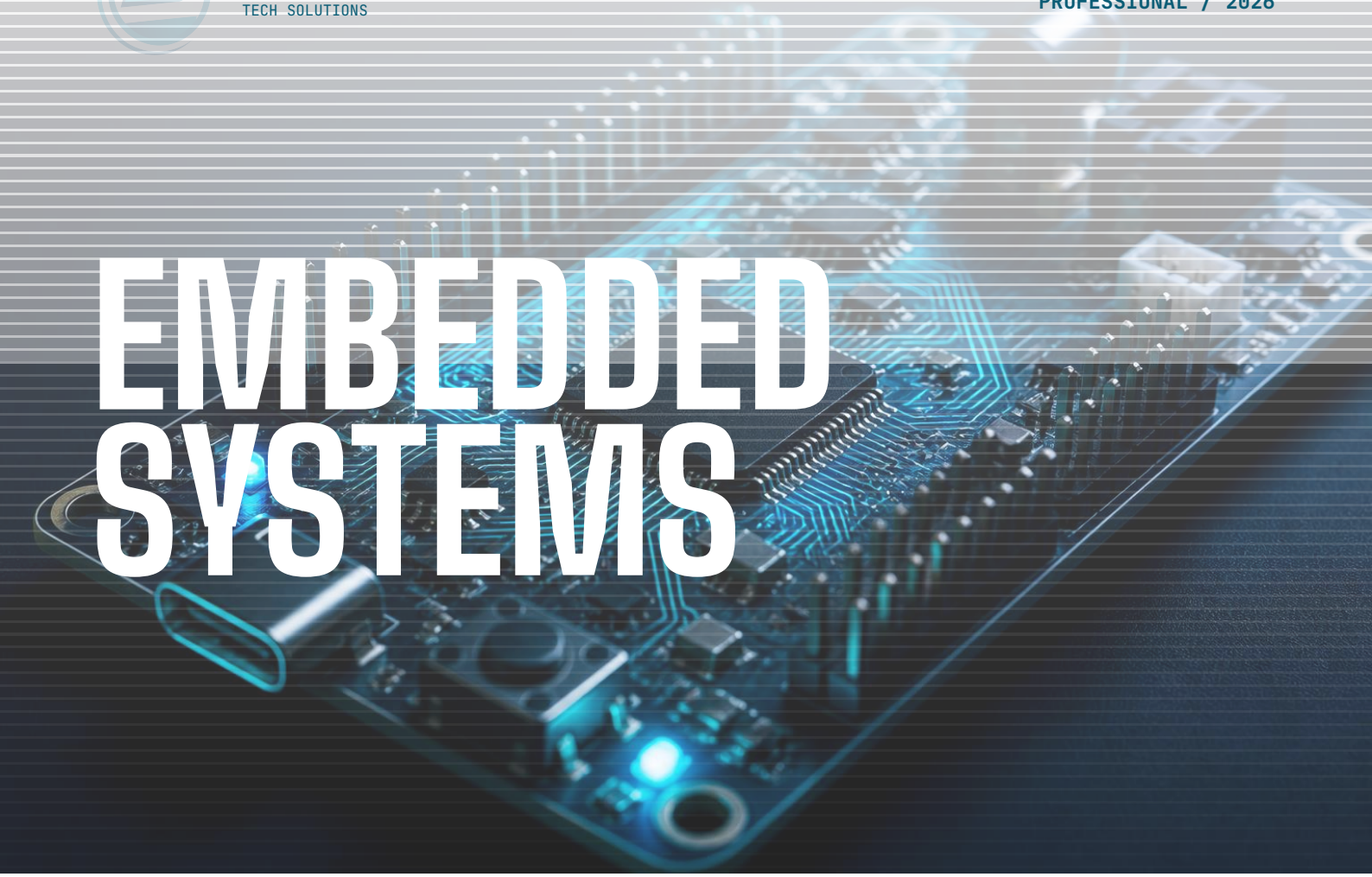
EDUFYI
TECH SOLUTIONS

PROGRAM TYPE
PROFESSIONAL / 2026



EMBEDDED SYSTEMS

ARM Cortex-M // RTOS // Automotive // Edge AI

22	40+	06	100%
WEEKS	SESSIONS	CAPSTONES	PLACEMENT AID

STM32 · FreeRTOS · Embedded C · CAN / LIN · AUTOSAR · TinyML · Embedded Linux · Zephyr · IoT / BLE · Secure Boot

OUR ALUMNI WORK AT

Microsoft · BOSCH · IBM · EY · Capgemini · Deloitte · Adobe

WHO ARE WE?

Edufyi Tech Solutions builds job-ready engineers. Our virtual internships and industry-mentored training programs pair deep technical curriculum with six real-time and capstone projects per domain, so every learner graduates with a portfolio, not just a certificate.

WHY CHOOSE US

SELF-PACED
Choose your speed, master the skills with flexible cohorts.

PROJECT LAB
Industry project playground on real hardware & simulators.

MENTORS
Live mentorship from MNC engineers and startup founders.

PLACEMENT
100% placement assistance, unlimited mocks and GDs.

CERTIFIED
Wipro DICE ID accredited, globally recognised certification.

LIFETIME LMS
Personalised LMS with recorded lectures, anytime access.

R&D CONTENT
Exclusive research-grade content from leading MNCs.

STIPEND
Performance-based stipend plus 1:1 career counselling.

ALSO INCLUDED

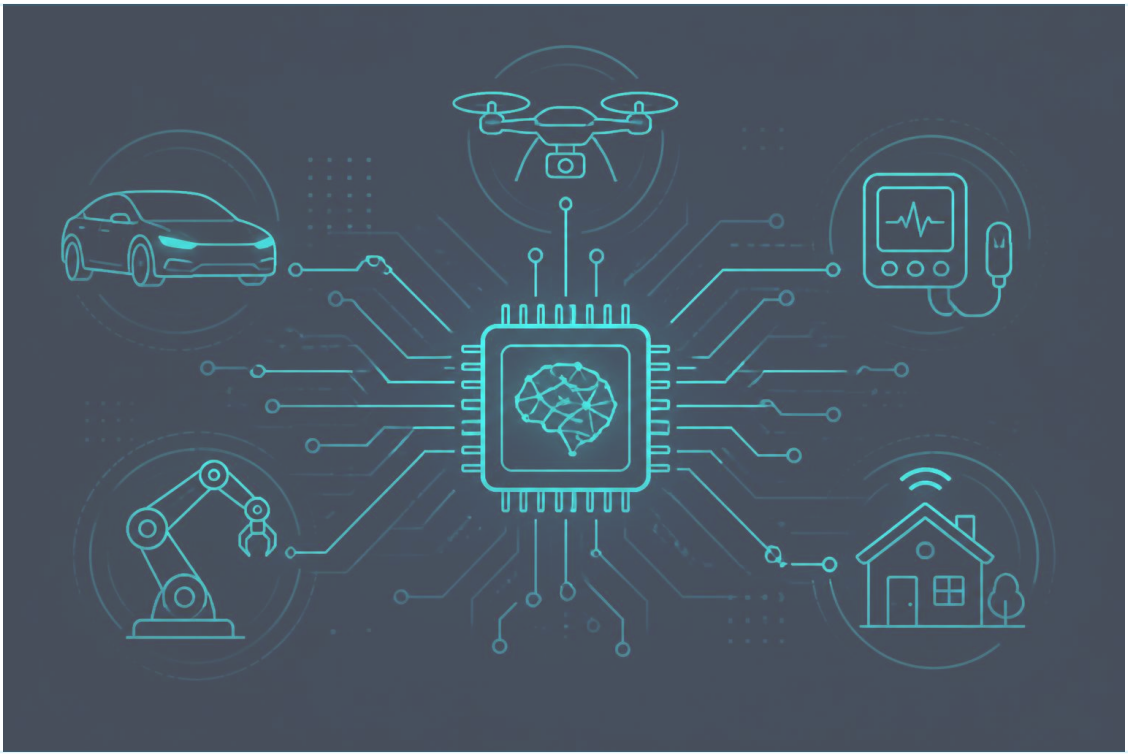
- Unlimited mocks & GDs
- 24x7 dedicated support
- Aptitude grooming
- Resume building
- Recorded lectures
- Hiring partner access
- Startup founder AMAs
- Domain electives

"We don't teach slides. We teach the firmware that ships."

02 / DOMAIN

WHAT IS AN EMBEDDED SYSTEM?

A purpose-built fusion of hardware and firmware that senses, decides and actuates in real time - inside cars, pacemakers, satellites, factory robots, wearables and every smart device shipping today.



SCOPE & MARKET

$116.2B
market size by 2030

16.1%
CAGR through 2030

30B+
connected edge devices

#1
hiring core-tech domain

WHERE THE DEMAND IS

Automotive & EV | Aerospace & Defence | Medical Devices | Industrial IoT 4.0 | Consumer Electronics | Robotics & Drones | Semiconductor & VLSI | Smart Energy

ADVANCED PROGRAM CURRICULUM

MODULE 01

FOUNDATIONS & EMBEDDED C

- Embedded system anatomy, classification, real-time vs general purpose computing
- Microprocessor vs microcontroller architecture, Harvard vs Von Neumann, pipelines
- Advanced Embedded C: pointers, bit manipulation, volatile/const, memory qualifiers
- Data structures for constrained targets: ring buffers, state machines, lookup tables
- Toolchain deep dive: GCC/ARM, linker scripts, startup code, map files, .bss/.data
- Version control, Makefiles/CMake and modular firmware project structure

MODULE 02

ARM CORTEX-M & BARE-METAL DRIVERS

- ARM Cortex-M0+/M4/M7 core, registers, Thumb-2, CMSIS and memory-mapped I/O
- Register-level GPIO, clock tree & PLL configuration, power modes and low-power design
- NVIC, interrupts, exception handling, priorities and vector table relocation
- Timers, PWM, input capture, watchdog, RTC, DMA controller and double buffering
- ADC/DAC, analog front-end, sensor signal conditioning and calibration
- Writing a reusable HAL from the datasheet + reference manual

MODULE 03

COMMUNICATION PROTOCOLS

- UART framing, baud calculation, parity, DMA-driven serial and error handling
- I2C: arbitration, clock stretching, multi-master buses, pull-up sizing
- SPI & QSPI: modes, external flash, display and sensor interfacing
- CAN & CAN-FD: arbitration, DBC signals, bus-off recovery, automotive gateways
- LIN, RS-485/Modbus RTU and industrial fieldbus basics
- USB CDC/HID, Ethernet, MQTT, BLE 5.x, LoRaWAN and Wi-Fi provisioning
- Protocol debugging with logic analyser, oscilloscope and bus decoders

ADVANCED PROGRAM CURRICULUM

MODULE 04

RTOS & REAL-TIME ENGINEERING

- RTOS internals: scheduler, context switch, tick, priority-based preemption
- FreeRTOS & Zephyr: tasks, queues, semaphores, mutexes, event groups, timers
- Priority inversion, deadlocks, race conditions and inheritance protocols
- Rate monotonic analysis, WCET, jitter, latency budgeting and profiling
- Inter-processor communication, tickless idle and RTOS power management
- Stack usage analysis, heap policies and hard-fault post-mortem debugging

MODULE 05

EMBEDDED LINUX & SoC PLATFORMS

- Boot chain: ROM -> U-Boot -> kernel -> root filesystem, device tree overlays
- Yocto & Buildroot image builds, cross compilation and BSP customisation
- Linux character device drivers, sysfs, GPIO/I2C/SPI subsystems
- Raspberry Pi / BeagleBone / i.MX platform bring-up and peripheral control
- Multithreading, IPC, systemd services and containerised edge workloads
- PREEMPT_RT real-time patch and performance tuning

MODULE 06

AUTOMOTIVE & FUNCTIONAL SAFETY

- Automotive E/E architecture, ECUs, zonal & domain controllers
- AUTOSAR Classic layered architecture, BSW, RTE and SWC configuration
- UDS diagnostics (ISO 14229), OBD-II, DTCs and flashing over CAN
- ISO 26262 functional safety lifecycle, ASIL levels, FMEA and safety mechanisms
- MISRA C compliance, static analysis and code coverage for safety-critical firmware
- EV powertrain, BMS fundamentals, motor control and sensor fusion basics

ADVANCED PROGRAM CURRICULUM

MODULE 07

EDGE AI, IoT & TinyML

- TinyML pipeline: data capture, feature engineering, training, quantisation
- TensorFlow Lite Micro & CMSIS-NN deployment on Cortex-M targets
- Anomaly detection, keyword spotting, gesture and vibration classification
- Sensor fusion with IMUs, Kalman/complementary filters
- Edge-to-cloud: MQTT/TLS, AWS IoT Core, digital twins, telemetry dashboards
- OTA firmware update design, delta updates and rollback strategy

MODULE 08

SECURITY, TESTING & PRODUCTISATION

- Embedded security threat modelling, secure boot chain and chain of trust
- Cryptography on MCUs, TRNG, key storage, TrustZone-M and secure elements
- Debug port locking, readout protection and firmware encryption
- Unit testing with Unity/CMock, HIL testing and CI for firmware
- Hardware bring-up, schematic reading, PCB basics, EMI/EMC and DFM
- Documentation, release engineering and production programming

MODULE 09 / ELECTIVE TRACKS

CHOOSE YOUR SPECIALISATION

Pick one elective track in the final phase and build your sixth capstone inside it, mentored by an engineer working in that industry today.

Automotive & AUTOSAR | Robotics & Drone Control | Edge AI / TinyML | Embedded Linux & BSP | Medical Device Firmware | VLSI & FPGA Basics | Industrial IoT 4.0

ASSESSMENT MODEL

Every module closes with a graded quiz, a hands-on lab review and a mentor code walkthrough. Firmware is reviewed the way it is in industry: readability, memory footprint, timing behaviour and MISRA compliance.

04 / TOOLCHAIN

TOOLS YOU WILL MASTER

Every module is taught on the same tooling used by product teams in automotive, medical and industrial firmware organisations.

SILICON & BOARDS

STM32F4 / STM32H7 · ESP32-S3 · Arduino Uno / Nano · Raspberry Pi 4 · TI MSP430 · nRF52 BLE · Renesas RA

IDEs & TOOLCHAINS

STM32CubeIDE · Keil uVision · VS Code + PlatformIO · ARM GCC · Yocto / Buildroot · Git & CI

DEBUG & TEST

ST-Link / J-Link · GDB & OpenOCD · Logic Analyser · Oscilloscope · CANoe / BusMaster · Unity + CMock

SIMULATION & AI

Proteus · Tinkercad · MATLAB / Simulink · QEMU · TensorFlow Lite Micro · Edge Impulse

SIX INDUSTRY CAPSTONES

P1 — CAN-BUS VEHICLE NODE
Multi-ECU CAN network with UDS diagnostics and a live dashboard.

P2 — RTOS SMART CONTROLLER
FreeRTOS multi-task controller with sensor fusion and OTA updates.

P3 — TinyML PREDICTIVE MAINT.
Vibration anomaly detection running on a Cortex-M4 in real time.

P4 — IoT ENERGY MONITOR
BLE + MQTT telemetry to cloud with TLS and digital-twin dashboard.

P5 — EMBEDDED LINUX GATEWAY
Custom Yocto image, device driver and edge-to-cloud bridge.

P6 — SECURE BOOTLOADER
Signed firmware, encrypted delta OTA and safe rollback on STM32.

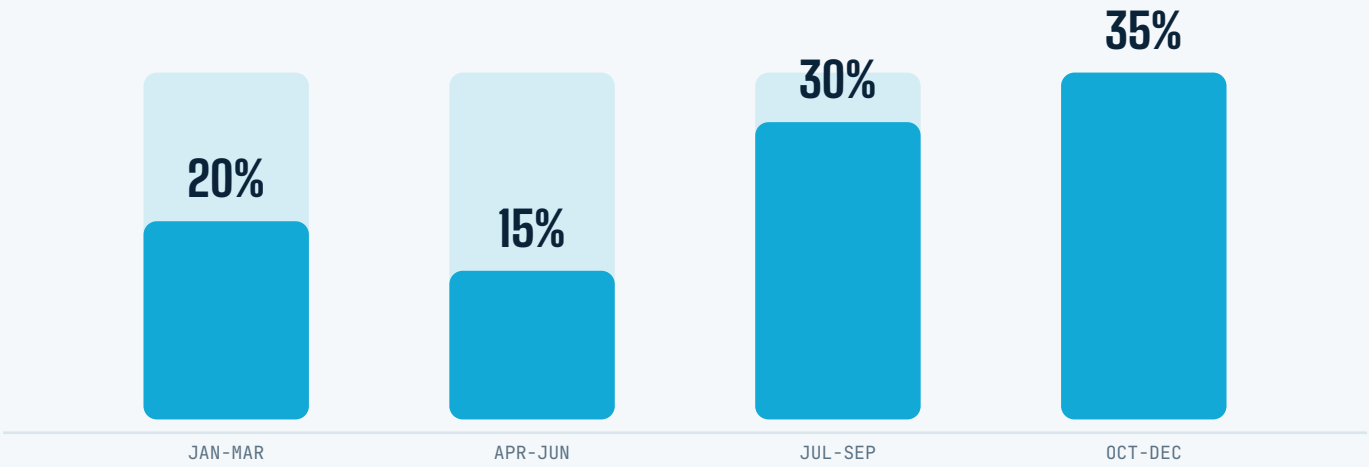
CAREER OPPORTUNITIES

Embedded Software Engineer Firmware for consumer, industrial and medical products	4.5 - 12 LPA
Firmware Developer (RTOS) Real-time task design on FreeRTOS / Zephyr targets	5 - 14 LPA
Automotive / AUTOSAR Engineer ECU software, CAN networks, UDS diagnostics, ISO 26262	6 - 16 LPA
IoT & Edge Solutions Engineer Connected devices, BLE / MQTT, cloud telemetry	5 - 13 LPA
Embedded Linux / BSP Engineer Yocto builds, device drivers, SoC bring-up	7 - 18 LPA
Hardware Validation & Test Engineer HIL rigs, bench automation, protocol compliance	4 - 10 LPA
Robotics / Control Systems Engineer Motion control, sensor fusion, ROS integration	6 - 15 LPA
Embedded Security Engineer Secure boot, TrustZone-M, crypto and key management	8 - 20 LPA

Indicative entry-level ranges for the Indian market; actual offers vary by company, location and interview performance.

PLACEMENT ANALYTICS

QUARTERLY PLACEMENT ANALYSIS



OFFERED PROFILES VIA EDUFYI

Core Embedded / Hardware	46.0%
Information Technology	34.5%
Operations & Product	11.4%
Business & Management	8.1%

LEARNER'S BACKGROUND

48.6%
B.E / B.Tech - ECE, EEE, E&I

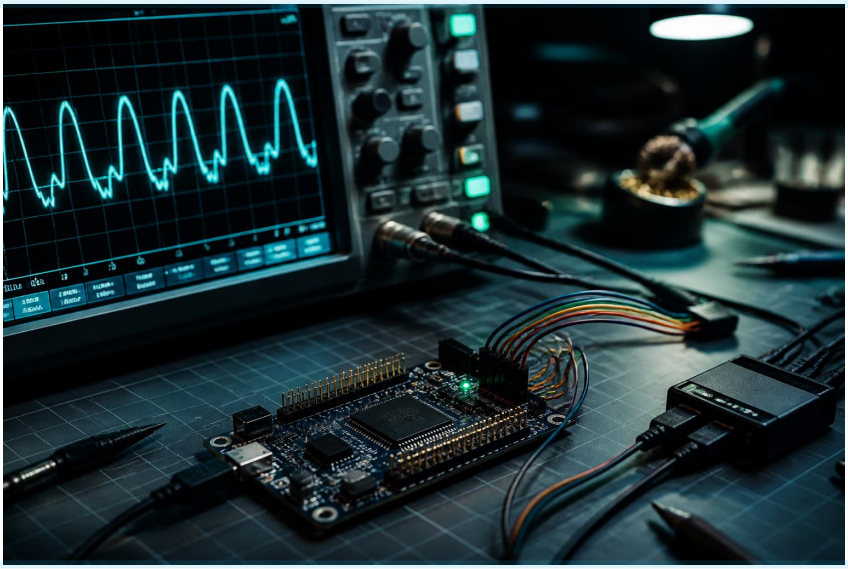
27.3%
B.E / B.Tech - CSE / IT

13.4%
Diploma / Polytechnic

10.7%
M.Tech / MCA & others

06 / GET STARTED

HOW YOUR JOURNEY WORKS



01

ENROL

Pick your track and pace with a 1:1 counselling session.

02

LEARN

Live mentor-led sessions plus lifetime LMS access.

03

BUILD

Six advanced capstones on real hardware and simulators.

04

CERTIFY

Wipro DICE ID accredited plus MNC certifications.

05

GET HIRED

Resume, mocks, GDs and hiring-partner referrals.

CERTIFICATIONS YOU EARN

WIPRO DICE ID

Globally recognised, blockchain-verified accreditation

INTERNSHIP CERTIFICATE

Domain internship completion with project record

INDUSTRIAL TRAINING

Signed industrial training certificate

MNC CERTIFICATIONS

Microsoft, Cisco, IBM, Autodesk, Adobe, ESB

AUTHORISED CERTIFICATION PARTNERS

Adobe · Microsoft · QuickBooks · Autodesk · Cisco · ESB

ACCREDITED CERTIFICATIONS.

Every learner receives industry-recognised, accredited certificates on completion of the internship, industrial training and capstone project modules.



INTERNSHIP CERTIFICATE
Accredited Certification



INDUSTRIAL TRAINING
Accredited Certification



PROJECT COMPLETION
Accredited Certification

INTERNSHIP

Verified internship completion credential

TRAINING

Industrial training hours certified

PROJECT

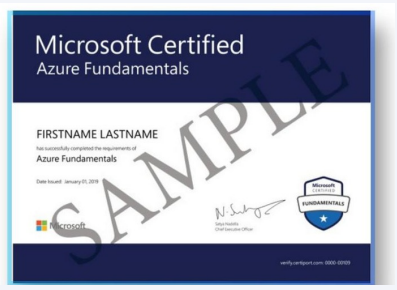
Capstone project completion proof

GLOBAL MNC CERTIFICATIONS.

Learners are prepared for and certified through globally recognised professional certification programs from leading technology companies.



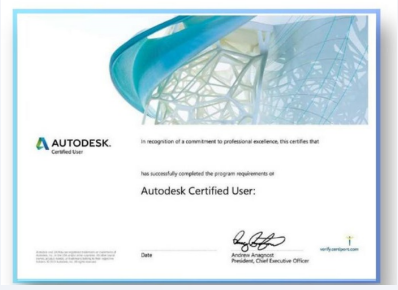
CISCO
Cybersecurity CCST



MICROSOFT
Azure Fundamentals



IBM
Internet of Things



AUTODESK
Certified User



ESB
Entrepreneurship

AUTHORISED PARTNERS.

Edufyi Tech Solutions is an authorised certification and testing partner for the world's leading technology certification bodies.

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MICROSOFT

QUICKBOOKS

AUTODESK

CISCO

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- Microsoft Azure Fundamentals
- Cisco Cybersecurity CCST
- IBM Internet of Things
- Adobe Certified Professional
- Autodesk Certified User
- ESB Entrepreneurship
- QuickBooks Certified User

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