

ABHISHEK KUMAR

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Education

National Institute of Science and Technology

Bachelor of Technology - Electrical Engineering; GPA: 8.2

August 2020 - April 2024

Berhampur, Odisha

Vidya Jyoti School

Intermediate ; Percentage: 60.8

May 2018 - April 2020

Ekangar Sarai, Bihar

Rosemary Land School

Matriculation ; Percentage: 79.2

May 2008 - April 2018

Biharsharif, Bihar

Experience

Manah Dynamics Pvt Ltd - Hyderabad, India

Trainee Engineer(Embedded Systems)

Sep 2024 - Present

On-site

Project 1: Smart Energy Meter

- Performed functional and manual testing of IoT-based smart energy meters (WC/LTCT/HTCT).
- Conducted hardware validation, fault troubleshooting, and device-level issue resolution.
- Performed firmware flashing and upgrades and verified proper meter operation.
- Monitored meter data, billing parameters, and communication status in HES.
- Verified data accuracy and processing in MDMS.
- Tested backend APIs using Postman for meter-to-server communication.
- Assisted in troubleshooting SIM, IP mapping, data push, and communication issues.

Project 2: EV Battery Charging System (Ongoing)

- Working on bootloader development for EV charging system.
- Implementing UART-based firmware update.
- Developing boot mode logic (timeout → jump to application).
- Handling flash memory operations for firmware update.
- Working on CRC-based validation (in progress).
- Debugging UART communication issues and gaining experience with MSPM0 Embedded C.

Technical Skills

Programming: Embedded C, C Programming, HTML / CSS (Basic).

RTOS: FreeRTOS

Microcontrollers: MSPM0 (Texas Instruments), STM32, ESP32, Arduino.

Tools: Code Composer Studio (CCS), STM32CubeIDE, Arduino IDE, VS Code, GXDLMSDirector, Postman, NuMicro Programming Tools (ICP/ISP), MATLAB Simulink, ETAP, Altium Designer.

Protocols: Basic understanding of DLMS/COSEM (IS 15959, IEC 62056), IS 16444 (Basics), AMI/HES/MDMS, Optical Communication, Cellular Communication (2G/4G/NB-IoT).

Embedded Concepts: GPIO, Timers, Interrupts, Bare-Metal Programming.

Communication Protocols: CAN FD (Flexible Data Rate), CAN, UART, SPI, I2C.

Debugging Tools: JTAG, SWD, J-Link, Nu-Link (Nuvoton), Oscilloscope, Logic Analyzer, Multimeter.

Platform: Windows, Embedded Linux (Basic).

Areas of Interest: Embedded Systems, Embedded Firmware Development, Smart Energy Metering, RTOS-Based Applications, Hardware Testing and Validation.

Leadership / Extracurricular

Robotics Club

(2022–2024)

Technical Lead

NIST

- Led the design and development of robotic systems, including hardware and software components.
- Coordinated team activities, project planning, and technical problem-solving.
- Technical Lead of the college robotics team, guiding students in robotics projects and troubleshooting.