TUSHAR CHAND GUPTA

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CAREER OBJECTIVE

Passionate Embedded Systems Engineer with a strong foundation in microcontrollers, real-time systems, electronics, and hardware-software integration. Looking to innovate in automotive, IoT, defense, and industrial automation. Committed to creating reliable, efficient, and optimized embedded solutions with modern tools and proto cols.

EDUCATION

B.Tech in Electronics & Communication Engineering
Institute of Engineering & Technology, Bundelkhand University, Jhansi
Graduating in 2027 | CGPA: 7.4

TECHNICAL SKILLS

- **Programming & Logic Design:** C, C++, Python, Rust, MATLAB; Verilog, VHDL; Data Structures & Algorithms, Logic Building
- **Microcontrollers & Architecture:** STM32, ESP32, 8051, RISC-V, ARM Cortex-M, VEGA Processor, Raspberry Pi; GPIO, ADC, DAC, Timers, Interrupts, DMA, NVIC
- **Protocols & Interfaces:** UART, SPI, I2C, CAN, CSI, LIN, MQTT, CoAP; RS232, RS485, USB, BLE, Wi-Fi, LoRa, GSM, NB-IoT; Ethernet, LAN, OTA
- **Embedded OS & Tools:** RTOS: FreeRTOS, Zephyr; Linux: Kernel, Device Drivers, Yocto, Buildroot; Tools: Keil, STM32CubeIDE, MPLAB, VSCode, PlatformIO
- **Hardware Design & Simulation:** Digital & Analog Electronics, Schematic Design; PCB Design: Altium, OrCAD, EasyEDA, KiCad; Simulation: LTspice, PSpice, Proteus, Multisim
- **UI/UX & Visualization:** LVGL GUI library, OLED & TFT touch screen UI interfaces
- **Cloud & Connectivity:** Firebase, AWS IoT Core, ThingsBoard, Node-RED; Cloud OTA Update, Real-time Monitoring, MQTT Dashboards
- **RF & Signal Systems:** Basics of RF Amplifiers, EMI/EMC Design, Spectrum & EMI Receivers; Antenna Design Fundamentals, DSP Basics

PROJECTS

- **JalRakshak – IoT-Based Real-Time Flood Alert System:** ESP32 + GSM + Ultrasonic & Pressure Sensors; Real-time MQTT alerts to Telegram/SMS/Cloud; Custom 2-layer PCB, Solar-powered setup
- **Soldier Health & Location Monitoring System:** STM32-based wearable with pulse, SpO2, GPS; LoRa communication to commander portal
- **Smart Weather Station:** ESP32 + GSM + DHT22, BMP280, Rain Sensor; Twitter/Telegram alerts via IFTTT; OTA Enabled
- **Custom Embedded Linux Board:** Created Linux image using Yocto, booted on ARM board; Developed I2C/SPI drivers; GPIO control via sysfs
- **GUI Interface with LVGL:** Home automation interface on ESP32 + TFT touchscreen; Custom buttons, sliders, and user interactions

CERTIFICATIONS

- NPTEL: Programming in Python, Digital Electronics, Control Systems
- Coursera: Embedded Systems Specialization – University of Colorado
- Udemy: Mastering Embedded C, STM32CubeIDE, Altium PCB Design
- MathWorks: MATLAB for Engineers, Signal Processing

HACKATHONS & ACHIEVEMENTS

- Finalist: Viksit Bharat S&T Hackathon 2024, IISF – IoT Forecasting Station
- Participant: Smart India Hackathon (SIH) – IoT-based Dam Alert System
- 2nd Place: TechManthan Hardware Hack – 2025
- Founder: Embedded Hardware Club – IET BU Jhansi
- PCB Designer: Created 10+ custom embedded PCBs for various projects

SOFT SKILLS

Leadership | Problem Solving | Public Speaking | Team Collaboration | Project Management | Documentation | TechnicalWriting

TOOLS & UTILITIES

Git & GitHub | JIRA | Docker (Basics) | MATLAB Simulink | VSCode | Keil uVision | STM32CubeMX | Proteus | Quartus | Vivado | Oscilloscope | Logic Analyzer | Function Generator | Multimeter

INTEREST AREAS

Embedded AI | Industrial Automation | Automotive Systems (AUTOSAR) | IoT Security | RF Systems | OTA Deployment | Smart Agriculture | Sensor Integration | Defense Tech

LANGUAGES

English: Professional Proficiency | Hindi: Native Speaker