Mritunjay Kumar Singh

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Education

Vellore Institute of Technology Bhopal, Madhya Pradesh   **2021-2025**

B.Tech- Electronics and Communication Engineering   *CGPA- 9.2*

Technical Skills

Languages: C++, C , SQL , Java , MATLAB

Technologies: Arduino , Raspberry Pi , STM , GitHub , PCB , VS Code

Tools: Arduino IDE, KiCad , Multisim , Proteus , Matlab ,Simulink , LT Spice , MS Office

Experience

TutorSolve

Freelance   *Remote*

- Delivered 50+ high-quality assignment solutions in core electronics domains, utilizing tools like MATLAB, Simulink, Multisim, and Proteus, resulting in 98% + client satisfaction and repeat requests.
- Simulated and analyzed complex electronic circuits and control systems using Simulink and Proteus, helping students achieve improved academic performance by up to 30% in practical lab submissions.

Projects

Hand Gesture Controlled Car ⭘   **January 2024**

- Architected and designed a functional prototype of a gesture-controlled car using Arduino, accelerometers, and wireless modules (NRF24L01), achieving 80% intuitive control accuracy through real-time gesture mapping.
- Led a team of 3 in designing and integrating gesture recognition technology, focusing on sensor calibration, wireless communication, and iterative prototyping to enhance human-machine interaction.
- Fabricated an IoT-enabled system for assistive mobility, enabling 90% real-time directional control via hand-mounted sensors, targeting applications for differently-abled individuals.

Automated Security Surveillance Platform ⭘   **March 2023**

- Engineered and deployed a home security system using ESP32-CAM and PIR motion sensors, enabling real-time video surveillance and motion-triggered alerts via Telegram Bot, enhancing user control and accessibility.
- Boosted motion detection accuracy by 60% by integrating advanced ESP32-CAM features with sensor fusion, improving recognition of valid movement events and reducing false alarms.
- Created a Telegram-based user interface for instant mobile alerts, reducing user response time by 45% and increasing user engagement by 60% over a 3-month period.

IoT Based Health Monitoring System ⭘   **October 2022**

- Formulated and initiated an IoT-enabled health monitoring system targeting elderly and differently-abled individuals, reducing emergency response time and decreasing critical health risk by 75%.
- Integrated heartbeat and temperature sensors to collect real-time vitals and trigger SMS alerts on abnormal readings; also incorporated GPS tracking for accurate patient location.
- Implemented secure Wi-Fi-based data transmission to cloud servers for remote monitoring and analysis, achieving 99% data security and significantly enhancing user experience.

Leadership / Extracurricular

- Led a 20-member team in the design and fabrication of an Electric All-Terrain Vehicle (E-ATV) for national-level competitions like BAJA and ATVC, managing subsystem integration, prototyping, and testing at VIT University.
- Selected among top participants for the "Trash to Treasure Ideation Hackathon" (2023) under the Electronic Waste category, showcasing innovation in sustainable tech reuse and e-waste management.
- Directed and managed the E-ATV sales team at VIT University, achieving an All-India Rank 2 in a national sales presentation competition, reflecting excellence in sales strategy, communication, and team coordination.

Certifications

- MATLAB Onramp – MathWorks
- IBM Data Analyst Professional Certificate – Coursera
- Machine Learning Specialization – Coursera
- VLSI Design Methodologies and RISC-V RV32I RTL Design using Verilog HDL