Kumari Aastha

+91-9199623184 | kumariaastha666@gmail.com | github.com/KumariAastha8921| linkedin.com/in/kumariaastha89/

Education

Vellore Institute of Technology, Bhopal Sept 2022 – May 2026
BTech - Electronics and Communication Engineering
Cumulative CGPA: 8.41

Skills

Programming Languages: Python, MATLAB, Varilog, C++, Embedded C.

Domains: Embedded Systems, VLSI Design, IoT, Signal Processing, Computer Vision.

Tools and Platforms: ESP32, Arduino, Raspberry Pi, SIMULINK, Git, NoSQL, MongoDB, EDA.

Projects

Automatic Wheelchair Control System Using BCI Jan 2025 – July 2025

- Developed a smart wheelchair system using Brain-Computer Interface (BCI) to enhance mobility for individuals with disabilities.
- **BCI-Based Control:** Used EEG sensors to enable hands-free wheelchair movement.
- **Autonomous Navigation:** Integrated IR and ultrasonic sensors for obstacle detection.
- **Machine Learning:** Applied ML to interpret neural signals accurately.
- **Hardware Integration:** Built using Arduino UNO, motors, and sensors for real-time control.

Interpretation and Processing of EEG Signals Using DSP Techniques July 2024 – Dec 2024

- The project developed a DSP-based framework to analyze EEG signals, enhancing Brain-Computer Interface (BCI) applications for people with motor disabilities by using DSP techniques to preprocess signals and remove noise.
- **Advanced EEG Processing:** The framework refines EEG data using advanced Digital Signal Processing (DSP) techniques like band-pass filtering, Independent Component Analysis (ICA), and wavelet transforms.
- **BCI Performance and Real-World Implementation:** The system optimizes BCI performance, allowing for seamless control of assistive technologies. The robust DSP models, built using MATLAB and Python, demonstrate their effectiveness for practical, real-world applications.

Certifications

VLSI Design – Maven Silicon: Jan 2025 – Mar 2025
I gained practical experience in hardware design and verification by completing a hands-on project that involved RISC-V ISA and RV32I RTL Design.

MongoDB Associate Database Administrator – FACE Prep: Jan 2025 – Apr 2025
This certification validates my proficiency in **MongoDB** for essential administrative tasks and effective database design.

Co-curricular

National Symposium on Innovations in Intelligent Systems | Event Management Jan 2025 – Feb 2025

Supported ANRF-Sponsored National Symposium: I played a key role in the successful execution of a two-day event by assisting with logistics, speaker coordination, and participant engagement, which ensured a smooth and high-quality experience for all attendees.

Additional

Language Known: English, Hindi

Hobbies: Sports, Travelling, Dancing