Mrinank Gaur

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Professional Summary

Electronics and Communication Engineering undergraduate skilled in full-stack development, digital design, and robotics. Experienced in building scalable solutions across embedded systems, SoC architectures, and MERN applications. Passionate about bridging hardware and software to create real-world impact.

Education

Vellore Institute of Technology *2022–2026*
B.Tech in Electronics and Communication Engineering **CGPA: 8.94/10**

The Khaitan School *2022*
Class XII (CBSE) **Percentage: 89.2%**

Experience

Digital Design Intern May 2024 – July 2024
Maven Silicon *Chennai, India*

- Designed and implemented an APB–AHB bridge for System-on-Chip (SoC) integration.
- Developed RTL designs in VHDL/Verilog and verified bus protocols.
- Performed simulation, synthesis, and functional verification using Cadence tools.

Projects

Boardly – Collaborative Whiteboard | *Next.js, TypeScript, LiveBlocks, Convex* | GitHub May 2025 – Jul 2025

- Built real-time collaborative whiteboard with live cursor presence and multi-user editing using LiveBlocks integration
- Developed comprehensive drawing toolkit with 5+ tools (rectangle, ellipse, path, text, notes) and layer management system
- Implemented user authentication, board sharing, and responsive UI components using modern design patterns

Email Authentication Kit | *MERN, Nodemailer, Handlebars* | GitHub Jan 2025 – Mar 2025

- Engineered secure email verification system with JWT token validation, achieving 95% delivery success rate
- Integrated Nodemailer with Handlebars templating engine for dynamic, professional email formatting
- Developed full-stack MERN application with MongoDB integration and responsive React frontend

Number Plate Recognition | *Python, OpenCV, EasyOCR, ESP32* | GitHub Jan 2025 – Mar 2025

- Developed real-time license plate detection system using ESP32-CAM and Python server, achieving 95% recognition accuracy
- Implemented OpenCV image processing pipeline with EasyOCR integration, reducing recognition latency to under 2 seconds
- Built responsive web interface for image capture and processing, supporting multiple image formats and real-time preview

Technical Skills

Languages: JavaScript, Java, Verilog, SQL, HTML/CSS
Frameworks: React, Node.js, Express.js, Material-UI
Developer Tools: Git, Cadence, ESP32, Raspberry Pi, Arduino
Libraries: OpenCV, pandas, NumPy, Matplotlib
Other: MongoDB, Convex, Clerk, LiveBlocks, JWT, Nodemailer

Clubs / Extracurricular

Robotics Engineer Oct 2023 – May 2025
Technocrats Robotics, VIT University *Vellore, India*

- Designed and calibrated 8-axis movement control for autonomous rover.
- Integrated Arduino/Raspberry Pi with ROS for sensor fusion and communication.
- Collaborated on modular software for motion planning and diagnostics.