Ayushi Lathiya

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Profile

- VLSI enthusiast designing optimized digital circuits using Verilog while exploring ASIC workflows, RTL design.
- Embedded systems developer crafting PCB-based solutions using STM32, ESP32/8266, MSP430, and CH32V003.
- IoT developer building real-time sensor-based applications with cloud integration, and mobile/web interfaces. s
- Passionate about ML, applying real-time data processing and sensor interfacing in next-gen applications.

Education

L. D. College of Engineering **2022 – 2026**
Bachelor of Engineering in Electronics & Communications **(CGPA: 8.39)** *Ahmedabad, Gujarat*

Relevant Coursework

- ASIC Design
- Internet of Things(IoT)
- Embedded Systems
- Design Verification
- Microcontrollers
- PCB Design
- Machine Learning
- Computer Networks

Experience

Google Developer Student Club (GDSC) - LDCE **Nov 2023 – Oct 2024**
Technical & Content Associate *Ahmedabad, Gujarat*

- Curated technical content for GDSC events, ensuring informative sessions across diverse technical domains.
- Gained hands-on experience with Android Studio, ML basics (TensorFlow), and Google Cloud Campaign.
- Actively organized and collaborated in tech workshops, enhancing peer collaboration and learning.

Projects

HeartStream: Custom Deep Learning Model | *Neural Networks, AI Chatbot*

- Trained a custom AI model based on ECGNet and MIT-BIH dataset to detect cardiac anomalies with 99% accuracy.
- Built an intelligent chatbot assistant to provide health insights.
- Enabled seamless waveform visualization, BPM tracking, PDF reports, and AI analysis.

ECG Diagnosis at Home | *AD8232, ThingSpeak, MIT App Inventor, Render*

- A real-time ECG monitoring system using AD8232 sensor and ESP8266, with continuous heart signal acquisition.
- Developed a mobile application using MIT App Inventor to display live ECG and BPM sourced from the ThingSpeak.
- Created a custom web application hosted on Render for advanced ECG analysis.

Gesture-Controlled Car | *ESP8266, IoT, MPU6050*

- Developed a wireless gesture-controlled car using two ESP8266 modules communicating via ESP-NOW protocol.
- Implemented MPU6050-based motion sensing to capture hand gestures, translating them into directional navigation.
- Designed the full hardware stack including dual L298N motor drivers, 5V DC motors.

Technical Skills

Languages: C, C++, Embedded C, MicroPython, Python, Verilog, HTML5/CSS3, JavaScript, TypeScript
Frameworks & Libraries: TensorFlow, Next.js, Pandas, NumPy, Matplotlib, Tailwind CSS
Hardware & Embedded Tools: STM32CubeIDE, Code Composer Studio, Xilinx ISE, EasyEDA, Fritzing, Arduino IDE
Software & Dev Tools: Git, GitHub, VSCode, MATLAB, MIT App Inventor
Cloud & Deployment Platforms: Streamlit, Firebase, Supabase, ThingsSpeak, Vercel, Render

Achievements

- Winner at **Healthathon 2025** for developing HeartStream: a hardware-dependent AI-powered ECG diagnosis platform.
- Selected in the **Smart India Hackathon 2024 (SIH'24)** Internal Hackathon for building a platform that empowers farmers with direct market access.
- Recognized as an **SSIP 2.0 Innovator** for proposing impactful tech solutions in Warehouse Automation

Blog

1. Building and Simulating a Binary Up-Down Counter Using Verilog/VHDL and Xilinx
2. Gesture-Controlled Car Using ESP8266 and MPU6050: A Wireless Solution
3. HeartStream: Real-Time ECG Monitoring and AI Analysis Using ESP8266 & Deep Learning