SONESH SK

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Summary

Pre-final year B.E. Electronics and Communication Engineering student targeting SDE, Embedded, VLSI and Agentic AI roles. Built real-time embedded systems on STM32 and ESP32, AI agent tooling with the Model Context Protocol (MCP), and deployed web applications. Skilled in C, C++, Python and Verilog, with hands-on experience in IoT firmware-to-cloud pipelines, RTL design and computer architecture.

Work Experience

IoT & Embedded Systems Intern Jun 2026

Wiman Communication Technology - embedded hardware and IoT product development (4G cellular gateways)

- Prototyped and assembled PCBs for the 4G gateway product line, bringing up cellular IoT boards with SIM-based LTE modules.
- Validated the SIM-based cellular module through functional testing, confirming reliable connectivity before hardware sign-off.
- Implemented an end-to-end IoT data pipeline covering sensor data acquisition, 4G transmission, cloud upload and remote access.

Freelance Video Editor & Game Developer Jun 2026 - Present

Melvin Deva - Instagram content creator

- Edited and delivered short-form Instagram videos on recurring deadlines, owning the process from raw footage to final export.
- Developing a finance-based physical board game for the same client that teaches players of all ages to make sound financial decisions.

Projects

Emergency Traffic Light Preemption System 2026

- Architected a distributed real-time embedded network across 3 ESP32 nodes over ESP-NOW, achieving sub-10 ms inter-node signalling latency with FSM-based intersection logic for deterministic emergency vehicle preemption.
- Deployed a live Raspberry Pi telemetry dashboard using MQTT pub/sub, streaming node state, alert events, response latency and manual override controls across the full embedded pipeline.

Web Search MCP Server for LM Studio GitHub

- Built a Python MCP server using the DuckDuckGo API as its search backend, giving locally hosted LM Studio language models live internet access through tool calling.

Vouchlock - The Delivery Ledger

- Designed a project management tool that connects an incoming client brief to daily execution and explicit proof of delivery, serving as a single source of truth for what was requested and what shipped.
- Replaced the to-do-list-first model of typical project tools with requirement clarification and verified proof of delivery.

Web Development Projects Cognix 2026 Website

- Developed the official website for Cognix 2026, a college hackathon, and built three additional web apps deployed on GitHub Pages: Construction Company site, Flowcraft WebApp and FashionSite demo.

4-DOF Intelligent Robotic Automation System 2026

- Engineered a 4-DOF pick-and-place robotic arm using Arduino and ESP32, with a custom web interface for real-time manual control and programmable task execution.
- Developed AI gesture-controlled operation using STM32, MediaPipe and YOLOv8 over low-latency UART, plus an HSV colour-based sorting subsystem on an STM32F446RE achieving 98% sorting accuracy.

Education

Sathyabama Institute of Science and Technology Chennai, India | 2024 - 2028

B.E. in Electronics and Communication Engineering

Indian Institute of Technology Madras 2024 - 2026

Foundation in Data Science Applications

Additional Information

Languages: C, C++, Python, Verilog, VHDL (exposure), MATLAB, SQL, JavaScript, Java

Technologies: STM32, ESP32, Arduino, Raspberry Pi, MQTT, ESP-NOW, UART, MediaPipe, YOLOv8, Git, Docker, Linux (Arch), CUDA, Unreal Engine 5, LLMs, Model Context Protocol (MCP)

Core Areas: VLSI Design, RTL Design, Digital Logic, Computer Architecture, GPU Architecture, Embedded Systems, IoT, Agentic AI