SAM SHERVIN SEBASTIAN

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Software Engineer specializing in AI/ML, Cloud, and Full-Stack Development, with experience in IoT, edge devices, and FPGA. Skilled in building scalable applications, GenAI solutions, and end-to-end pipelines.

Experience

CTD Techs Pvt. Ltd. — **May 2025 – Jul 2025**
AI/ML Intern — *Chennai, India (Onsite)*
- Built and optimized document pipelines, benchmarking OCRs for scalable LLM preprocessing.
- Developed an agentic AI model for medical underwriting to extract risk signals from unstructured documents.
- Collaborated in Scrum with daily stand-ups, incorporating mentor feedback for timely deliverables.

Samsung R&D Institute India - Bangalore (SRI-B) — **Apr 2025 – Oct 2025**
PRISM Intern — *Virtual (Part-time)*
- Implemented Sobel Filter hardware-accelerated IP in Vitis HLS for real-time webcam streaming.
- Performed LED testing, FIR filter design, and image flashing on FPGA boards (PYNQ Z2, ZCU104).
- Currently working on building image for ZCU102 FPGA board.

Daira Edtech Pvt. Ltd. — **Apr 2024 – Jul 2024**
Frontend Developer Intern — *Remote*
- Built responsive frontend for AI mentorship portal using Next.js and Tailwind CSS.
- Oversaw GitHub repositories and set up CI/CD pipelines for seamless automated deployments.
- Consistently delivered tasks ahead of schedule, demonstrating efficiency and professionalism.

Technical Skills

AI / ML: PyTorch, TensorFlow, Hugging Face, OpenCV, LangGraph, RAG, MCP, Pandas, NumPy
Web / Backend: Next.js, React, FastAPI, Node.js, Bun, Prisma, PostgreSQL, REST, TailwindCSS, GSAP, Spring Boot
Cloud / DevOps: AWS (Lambda, API Gateway, Amplify, DynamoDB), Docker, Cloudflare, Supabase, GitHub Actions, Nginx
Languages: Python, JavaScript/TypeScript, C/C++, Java, SQL, Markdown
Hardware / Embedded: ESP8266, ESP32-CAM, Xilinx PYNQ Z2, ZCU104

Leadership & Technical Activities

IEEE Computer Society Student Chapter, VIT Chennai — **Nov 2022 – Nov 2025**
Developer Relations Head & Technical Head — *Chennai, India*
- Led Developer Relations and Technical teams, managing events, interview panels, and infrastructure (GitHub, Cloudflare).
- Built event applications (CTF bot, OpenCV gesture game) and multiple web apps/sites using Next.js and Astro.

Vibrance Fest, VIT Chennai — **Feb 2025**
Website Head — 🌐 *Live Site*
- Led the web team and directed technical strategy to deliver the production fest site, scaled to 50K+ users.
- Built frontend components with Next.js and GSAP, leveraging Vercel Edge Cache for optimized performance and availability.

Projects

Intelligent Litter Detection and Severity Estimation — *Coursework Project*
Python, PyTorch, OpenCV, FastAPI, React — *GitHub*
- Implemented a YOLO-based object detection system with severity scoring using segmentation, depth, and material.
- Developed a full FastAPI backend and React dashboard for geo-tagged visualization and real-time inference.

Remote Video Streaming over Cloud Tunnel — *Academic Project – Computer Networks*
ESP32-CAM, Node.js, WebSocket, Cloudflared — *GitHub*
- Developed a real-time ESP32-CAM streaming system, globally deployed via Node.js tunnel with DNS routing.
- Engineered a WebSocket-based client/server to enable live viewing, remote recording, and on-demand video downloads.

Serverless URL Shortener — *Personal Project*
Next.js, AWS Lambda, API Gateway, DynamoDB, ACM, Cloudflare DNS, AWS Amplify — 🌐 *Live Site*
- Built a serverless URL shortener with HTTPS and click tracking using AWS Lambda, API Gateway, and DynamoDB.
- Deployed the Next.js frontend on AWS Amplify for SSR, auto-builds, CI/CD, and integrated seamlessly with backend APIs.

Certifications

Microsoft Certified: Azure AI Fundamentals (AI-900) — **July 2024**

Education

Vellore Institute of Technology, Chennai Campus — **Sep 2022 – Jun 2026**
B.Tech, Electronics and Computer Engineering — *CGPA: 8.89*