

VIGHNESH NILAJAKAR

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OBJECTIVE

Electronics & Communication Engineering student (7th semester) seeking an Internship in Embedded Systems Programming. I actively keep up with emerging technologies to understand how they work, which helps me design high-level technical architectures, build efficient projects, and integrate new innovations effectively. Passionate about firmware, microcontrollers, and edge-AI integrations, aiming to contribute to product-driven innovation.

EDUCATION

| | |
|---|---------------------------|
| B.E. Electronics & Communication Engineering | Expected Graduation: 2026 |
| Maratha Mandal's Engineering College (MMEC), VTU 7th Semester CGPA: 7.5 | |
| Kendriya Vidyalaya Sanghatan | 2020–2022 |
| Senior Secondary Education (PCM) 66% | |
| Kendriya Vidyalaya Sanghatan | 2019–2020 |
| Secondary Education 86% | |

TECHNICAL SKILLS

Embedded / Firmware: C programming, Arduino/ESP32, Raspberry Pi, GPIO, SPI, I2C, UART, timers, sensors
Edge / AI Interface: Local LLMs, AI prompt workflows, productivity automation, embedded data streaming
Systems & Tools: Linux (CLI & shell scripting), Git/GitHub, Firebase, AI tools for prototyping and workflow enhancement
Web / Prototyping: HTML, CSS, Hugo, JavaScript
Analytical: Problem-solving, debugging, system design, rapid prototyping, and coordination

SELECTED PROJECTS

ESP32-CAM AI Assistant (Prototype) Built a wearable prototype using ESP32-CAM for real-time image/audio capture and AI inference, enabling interactive voice-visual responses.

Wi-Fi Security Research (ESP8266) Studied 802.11 deauthentication packets and Wi-Fi protocol vulnerabilities via custom firmware experimentation.

ChartGPT (Hack2Intern) Created an AI-based data visualization tool using Firebase Auth, Google Charts, and Gemini AI API; demonstrated embedded-to-cloud integration.

Airotor (Medico-Engino) Designed an automated medical rotor prototype integrating microcontrollers and sensors to enhance process efficiency.

Student Innovation Club Website Developed and deployed a Hugo + Firebase-based website supporting event management and documentation workflows.

EXPERIENCE & LEADERSHIP

Event Manager & Host — Student Innovation Club (TechGeeks) Organized workshops and hackathons (StartUp Spark, Sparkathon); mentored peers, delivered tutorials, and maintained the club's website.

UI/UX Tester (Freelance) Conducted usability testing for web/mobile prototypes; created reports improving navigation and design consistency. These testing roles also helped me develop strong soft skills and gain exposure to emerging technologies like GPT models, digital verification systems, and AR solutions.

Volunteer — Academia-Industry Conclave & College Events Coordinated logistics, engaged with industry experts, and supported large-scale event execution.

WORKSHOPS & IMMERSIONS

NSM & C-DAC – Accelerated Computing & Generative AI (10-day STP, WCE Sangli) Explored parallel computing (MPI, OpenMP), CUDA/OpenACC, LLMs, and AI-driven optimizations.

KBR KRIYA CSR Initiative (Sustainable Tech) Selected among Top 24 of 2,000+ participants; attended immersion at KBR Chennai focusing on digital transformation, embedded systems, and AI in industrial operations.

ACHIEVEMENTS & INTERESTS

- Finalist – Top 24/2,000+ in KBR KRIYA CSR Initiative for Sustainable Technologies
- Hack2Intern – Finalist for ChartGPT AI-driven visualization project integrating embedded and cloud systems
- National-level swimmer; volleyball enthusiast
- **Interests:** Embedded Systems, Edge AI, Open-Source Hardware, System Architecture, Innovation Design