



Vignesh Thanigaivel

B.tech Electronics and Communications

Phone: +91 8300829502

Email: vigneshta004@gmail.com

Portfolio: vigneshta.com

leetcode.com/u/tavignesh (200+Streak)

github.com/tavignesh

linkedin.com/in/tavignesh

EDUCATION

- Vellore Institute of Technology, Vellore** 2026
B.tech Electronics and Communication Engineering with specialization in Biomedical Engineering CGPA: 8.04
- Atomic Energy Central School, Anupuram** 2022
Central Board of Secondary Education (CBSE) - Computer Science Percentage: 93.6

TECHNICAL SKILLS

Programming Languages: Python, Rust, C, SQL, HTML, CSS, Assembly, Verilog, Matlab, R, Java, C++, JavaScript
Frameworks & Libraries: AWS, LangChain, ChromaDB, Ollama, RAG, NoSQL - MongoDB, Nginx, REST API, Docker, WebRTC, Socket.IO, Django, Discord.py
Additional Proficiencies: Data Structures and Algorithms, Server Design and Load Management, Multi-threading, OOP, Version Control (Git)
Soft Skills: Public Speaking, Delegation, Collaboration, Diligence, Result Oriented, Flexible
Languages: English, Hindi, Tamil, German

PERSONAL PROJECTS

- Scalable Linked NGINX RTMP-Based Multi-Endpoint Live Video Restreaming System** [Project Link]
 - Designed and deployed a scalable live streaming system using NGINX with RTMP for adaptive stream replication, dynamic multi-endpoint delivery, and optimized failover—ensuring high performance under heavy viewer load.
 - Tools & technologies used: NGINX, FFmpeg, RTMP, Linux, Shell Scripting
- Real-Time Proximity Voice Interaction Platform Using WebRTC, Socket.IO, and Phaser** [Project Link]
 - Developed a browser-based spatial voice chat platform enabling proximity-based audio using WebRTC for P2P communication, Socket.IO for real-time avatar state sync, and Phaser 3 for 2D movement.
 - Tools & technologies used: JavaScript, WebRTC, Socket.IO, Phaser, Node.js, HTML5
- Modular Python Discord Bot with MongoDB Integration and External API Support** [Project Link]
 - Built a scalable, modular Discord bot in Python featuring dynamic user commands, role management, and real-time interactions via multiple external APIs and MongoDB-based persistence.
 - Tools & technologies used: Python, Discord.py, MongoDB, REST APIs, Asynchronous Programming
- For more Projects - vigneshta.com/projects [LINK]

WORK EXPERIENCE

- Indira Gandhi Centre for Atomic Research [IGCAR]** Jun. 2024 - Jul. 2024
Wireless Sensor Networks (Offline Internship) Kalpakkam, Tamil Nadu
 - Designed a wireless packet loss testing system using 25 Zigbee modules and a SAMD20 Cortex M0+ MCU, applying IEEE protocols, ADCs, and embedded system design across 8-bit to DSP microcontrollers.
- RC Studios** Jul. 2024 - Aug. 2024
Server Design & Administration (Hybrid Internship) Coimbatore, Tamil Nadu
 - Engineered an Nginx-based Linux streaming server with FFmpeg for multi-resolution RTMP output and HLS playback, incorporating load management strategies to ensure stable performance under high concurrent traffic.
- Freelance** Jun. 2023 - Present
Server Administrator (Hybrid)
 - Executed & supervised high-integrity server deployments implementing advanced load balancing while ensuring compliance with strict validation protocols and infrastructure performance benchmarks.
- Freelance** Mar. 2023
Website Design (Online)
 - Architected, deployed, and maintained secure web infrastructures, integrating SSL, HTTP server configurations, DNS management, and backend database systems to ensure robust and scalable online platforms.

PUBLICATIONS

- Cloud-Controlled Dynamic Smart Street Lighting System** 16 Feb. 2024
2023 International Conference on Next Generation Electronics (NEleX)
DOI: 10.1109/NEleX59773.2023.10420861 [LINK]
- IoT and Cloud based Automated Irrigation System** 02 Jul. 2024
2024 3rd International Conference on Artificial Intelligence For Internet of Things (AIIoT)
DOI: 10.1109/AIIoT58432.2024.10574611 [LINK]