SIVAKUMAR BALAJI

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EDUCATION

SRM Easwari Engineering College *B.E Computer Science and Engineering CGPA:8.87*   Chennai, TN
Sept2023-May 2027

Amrita Vidyalayam, CBSE   Chennai, TN
Senior Secondary Education,Score:93.2%   *2022 - 2023*

TECHNICAL SKILLS

Languages: Python, C, C++
Web Development: Framework / Libraries (Backend): Django, Flask, PyMongo
Machine Learning: Pytorch, Regression Analysis, RAG, Transformers, EDA (Exploratory Data Analysis)
Databases / ORMs: MySQL, MongoDB
Developer Tools: GitHub, VS Code
IoT / Embedded Systems: Raspberry Pi, ESP Microcontrollers

CERTIFICATIONS

Java Concepts - Infosys Springboard   Mar 2025
Networking Basics - Cisco NetworkingAcademy   Sept 2024
Introduction to IoT - NPTEL   July-Oct 2024
C++ Fundamentals - InfosysSpringboard   Aug 2024

PATENTS

AquaVortex(2025) – Patent published | *IoT, C++*
- An **IoT-enabled** vortex filtration system designed to intelligently collect marine debris and oils, addressing large-scale ocean pollution.

INTERNSHIPS

AIML Intern - Internpro, Chennai, Tamil Nadu, India
Duration: June 2025 - July 2026
Mode: Remote
- Solved real-world problems using AIML techniques
- Developed an AI powered model for predictive lead scoring in CRM

PROJECTS

JUNE - Journey to Understand Navigate and Enlighten | *Whisper, GGUF LLM, MySQL*
- Developed a desktop library chatbot with voice input (Whisper), text-to-speech, local GGUF LLMs and MySQL-backed book search and conversational model, with offline-capable Python GUI.
- Presented at SALIS 2025 and won First Prize in the student category for the system's impact on library assistance and active learning.

AI-Powered Farming System with Disease Detection and Fertilizer Optimization | *Transformers, Computer Vision, RAG*
- Developed an IoT + AI system for automated irrigation, crop disease detection **(ResNet-50 - fine-tuned)**, and fertilizer recommendation **(BERT & BART fine-tuned models)**. Secured 2nd place at KL University's Hack with IoT 2025.

Smart ML-IoT Based Irrigation Control System | *Machine Learning, Regression Analysis, IoT, MongoDB, Django*
- Built an ML + IoT-based **(Feed-Forward Neural Network & XGBoost)** smart irrigation solution to optimize water usage using real-time soil and weather data.
- Secured 7th place at CMR Hackfest 2.0, 2025.

AI-Powered Smart Animal Detection & Alert System | *Computer Vision, IoT, MongoDB, Flask*
- Developed a real-time road safety solution using **YOLOv5 (fine-tuned)** and IoT to detect animals on roads and alert nearby vehicles via **LoRa and Raspberry Pi.**
- Secured a spot in the Top 140 teams at Uyir Road Safety Hackathon 2025.

AWARDS

- **1st Place, SALIS 2025, Conference on Library Science, Crescent University (National)**   Jun 2025
- **2nd Place, Hack with IoT – KL University,** Vijayawada **(National)**   Apr 2025
- **Top 30 Finalist, Electrothon** – Chennai Institute of Technology **(National)**   Mar 2025
- **Top 7 Finalist, CMR Hackfest 2.0** – CMR College **(National)**   Jan 2025
- **Top Team Recognition, UYIR Road Safety Hackathon** – Sri Krishna College, Coimbatore **(National)**   Feb 2025