SURENDAR S

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♀ Kanchipuram, Tamil nadu.

EDUCATION

B.E. - Electronics and Communication Engineering

2021 - 2025

University College of Engineering, Kanchipuram — Constituent College of Anna University

Minor Specialization: Computer Science and Engineering —Full Stack Development (18 Credits)

CGPA: **8.5 / 10**

SKILL SUMMERY

• **Programming:** Python, C++, SQL

Databases & SQL: MySQL, SQLite, Database Design

Data Analysis & Visualization: Pandas, NumPy, Matplotlib, Seaborn, Tableau, Jupyter Notebook

• IoT & Edge Computing: Raspberry Pi, RTOS, Sensors, Embedded system

• **Web Development:** Flask, HTML, CSS, JavaScript

AI & ML: Machine Learning, Deep Learning, Computer Vision, Chatbots, TensorFlow, PyTorch

MLOps: Model Deployment with Flask and FastAPI, Docker, Git, CI/CD

• Mathematics & Statistics: Probability, Hypothesis Testing, Linear Algebra, Calculus, Time Series Analysis

Tools & Platforms: Git, Firebase, Supabase, VS Code

EXPERIENCE

Co-Founder / Project Lead – Maternova: Smart Maternal Monitoring System

March 2025–Present

- Developed a wearable IoT system with Edge AI for real-time monitoring of maternal and newborn health.
- Implemented multiple AI models for maternal health risk prediction.
- Built a RAG-based AI chatbot for patient guidance, data entry, and health prediction using NLP and LLM techniques.
- Designed secure digital health records with automated documentation workflows using OCR and Selenium.
- Developed full-stack solution: Frontend (HTML, CSS, JavaScript), Backend & Cloud (Flask, Firebase, Supabase).
- Prototype successfully tested in real-world scenarios; currently under product development and seeking funding.

PERSONAL PROJECTS

1. AI-Based Fall Prevention System for Elderly – National-level Smart India Hackathon Finalist. Link Dec 2024

- Collected real-world motion data (Standing, Walking, Sitting, Running, Falling) using Raspberry Pi.
- Performed Exploratory Data Analysis (EDA) and trained a fall prediction model (>90% accuracy).
- Deployed model on Edge AI hardware to auto-trigger an airbag mechanism upon fall detection.
- Outcome: Under faculty mentorship for patent filing; ongoing enhancements and research with team.

2. RAG-Powered Generative AI Personal Assistant. Link

June 2025

- Developed a Generative AI bot for personal use to answer questions about projects, skills, and career.
- Tech Stack: HuggingFace sentence-transformers, LangChain, FAISS, PyPDFLoader/CSVLoader.
- Outcome: Gained hands-on experience with RAG pipelines, document embeddings and AI deployment.

CERTIFICATION & TRAINING

Machine Learning Specialization – IBM – In Progress, 2025 Link

Exploratory Data Analysis, Supervised ML (Regression & Classification), Deep Learning, Reinforcement Learning.

- Generative AI & Retrieval-Augmented Generation-IBM-July 2025 Link
- Advanced Electronics Manufacturing with Power Electronics IIT Madras Feb 2025
- Embedded Systems & IoT NSIC Technical Centre–Aug 2024
- Artificial Intelligence Naan Mudhalvan Nov 2023

Languages: English (Full Professional Proficiency), Tamil (Native)