Surendar S

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Driven in AI/ML and Data Science, with strong skills in Python, machine learning, and real-world data analytics.
Proven success applying AI solutions through national hackathon achievements and practical IoT projects.
Ready to contribute practical AI skills to build impactful solutions in the IT industry.

EDUCATION

B.E. - Electronics and Communication Engineering
University College of Engineering, Kanchipuram — *Constituent College of Anna University*
Minor Specialization: Computer Science and Engineering —Full Stack Development (18 Credits)
2021 – 2025
CGPA: **8.5 / 10**

SKILLS

Programming: Python, C++

AI & ML: Machine Learning, Deep Learning, Computer Vision, Chatbots, Edge AI

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

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

Web Development: Flask,HTML, CSS, JavaScript

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

CERTIFICATION & TRAINING

- Machine Learning Specialization Course – IBM – In Progress
- Advanced Electronics Manufacturing with Power Electronics IIT Madras – Feb 2025
- Exploratory Data Analysis for Machine Learning – IBM – 2025
- Supervised Machine Learning: Regression – IBM – 2025
- Supervised Machine Learning: Classification – IBM – 2025
- Python for Data Science, AI & Development – IBM – 2025
- Embedded Systems & IoT – NSIC Technical Centre – 2024
- Artificial Intelligence – Naan Mudhalvan – 2023

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

PERSONAL PROJECTS

AI-Based Fall Prevention System for Elderly
National-level Smart India Hackathon Finalist – December 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 with over 90% accuracy.
- Deployed the model on Edge AI hardware to auto-trigger an airbag mechanism upon fall detection.
- **Outcome:** Currently under faculty mentorship for **patent filing**; further enhancement and research work are ongoing with my team as part of the patent development process.

Smart Lock System with Face Recognition -2024

- Collected facial image data using Raspberry Pi and developed a lightweight face recognition model.
- Deployed the model on Edge AI hardware to trigger lock opening via relay based on face verification.
- Built a Flask + Firebase dashboard for real-time remote lock control and monitoring.
- **Outcome**: Successfully demonstrated to faculty and peers; recognized for innovation and practical design during internal review.

STARTUP PROJECT

MATERNOVA
Smart Maternal Monitoring System

- **Use Case:** Many mothers and newborns lack real-time health monitoring, delaying detection of critical conditions and timely care.
- **Solution:** Co-developed a wearable IoT system with Edge AI for continuous vital tracking, early prediction of maternal health risks, real-time fall prevention, and secure digital health records with automated documentation workflows.
- **Business Opportunity:** Addresses the need for accessible, affordable maternal health monitoring while improving healthcare productivity through automated documentation bots and smart record workflows with strong potential to expand digital healthcare access in underserved communities
- **Technical Stack:**
  Hardware: Raspberry Pi, biomedical sensors
  AI Models: Random Forest (~94% accuracy)
  Software:
  - Frontend: HTML, CSS, JavaScript
  - Backend & Cloud: Flask, Firebase, Supabase

  Automation & Integration:
  - OCR for extracting inputs from reports/forms
  - Selenium for automation and certificate generation
  - AI chatbot for guided data entry and patient support
- **Outcome:** Prototype tested in real-world scenarios; currently under product development and seeking funding for future pitching and deployment.