TEJASWINI BASKAR

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Executive Summary

Results-driven Computer Science Engineer specializing in Data Science and Artificial Intelligence, with a strong foundation in statistical analysis, machine learning, deep learning, and predictive modeling. Skilled at transforming complex, large-scale datasets into actionable insights using advanced AI-driven techniques. Proficient in designing and developing intelligent, data-centric applications and web solutions that seamlessly integrate analytics, automation, and user-focused features. Adept at bridging cutting-edge AI/ML algorithms with practical software engineering to deliver scalable, high-performance, and innovation-driven solutions.

Education

SRM University – Kattankulathur 2023-2028 | CGPA : 8.69
M.Tech (Integrated) – Computer Science & Engineering - Data Science

GK Shetty Vivekananda Vidyalaya 2022-2023 | Percentage – 80.2%
Class – XII – CBSE - PCM

GK Shetty Vivekananda Vidyalaya 2020-2021 | Percentage – 89%
Class - X – CBSE

Technical Skills

- **Programming:** Java,Python,C++,C
- **Artificial Intelligence:** Meta-Learning (MAML), Deep Learning, CNN/3D-CNN, Signal Processing (ICA/PCA)
- **ML Frameworks:** Matlab, Scikit-learn, Tensorflow, Numpy
- **Web Technologies:** HTML, CSS, JavaScript, React.js, Node.js
- **UI/UX Design:** Wireframing, Prototyping, Figma
- **Frameworks & Tools:** Django, Android Studio, Git
- **Databases:** MySQL, SQLite
- **Cloud:** AWS Cloud Foundations

Projects

Fetus **[February 2025- Present]**
• Designed a hybrid AI pipeline (MAML, BiLSTM, XGBoost, RF, adaptive filters, ICA/PCA, Doppler-PPG fusion) to isolate fetal signals, improving fetal HR extraction accuracy by ~40%.
• Built a FastAPI microservices backend for real-time fetal vitals streaming and FHIR storage, and developed GenAI telemedicine assistants using LangChain + RAG.
• Led hardware R&D with soft stretchable bio-sensing materials, optical + Doppler modules, optimized LED wavelengths, and implemented multimodal fetal-risk scoring improving early-risk prediction by ~35%.
• Developed an integrated maternal–fetal distress prediction system using CNNs, PPG models, symptom fusion, and AI-optimized hardware accelerators for high-accuracy, real-time inference.

AGRO-AI **[June 2025- Present]**

Meta-Learning Powered Agricultural Intelligence Platform

• Built a statewide offline-first AI platform with soil analytics, MAML yield prediction, irrigation ML, and CNN/3D-CNN disease diagnosis (92% accuracy).

• Achieved **30–35% better yield prediction** with MAML and automated soil nutrient/pH/carbon profiling using Soil Health Cards, ISRIC SoilGrids, AgriStack, and Krishi Mapper.

• Integrated RainBird IQ4 for ML-based irrigation scheduling reducing **water use by 30–40%**, and deployed TFLite models for instant field-leaf diagnosis.

• Built a multilingual LLM layer (Gemini + LangChain) and MLOps stack (MLflow + TorchServe) enabling continuous retraining and **95% faster decisions** with 40% less fertilizer misuse.

E-Volt: Intelligent IoT-Driven Smart Energy Optimization System **[August 2025 – November 2025]**

IoT, RFID, Sensors, Raspberry Pi, Cloud Analytics, ESG Engine

· Developed an IoT-based smart energy management system that automates lighting, HVAC, and electrical loads using RFID-verified occupancy and sensor data.

· Built a retrofit-friendly architecture with Raspberry Pi edge controllers and cloud dashboards for centralized monitoring, remote overrides, and real-time power analytics.

· Integrated a Carbon-Credit & ESG Reporting Engine to convert energy savings into CO_2-reduction metrics for institutional sustainability compliance.

· Achieved **30–40% reduction in energy consumption** across campuses and commercial facilities through intelligent automation and workflow-linked energy optimization.

FarmBridge **[August 2024 – November 2024]**

Java, Spring Boot, Hibernate, SQL, AWS EC2

· Developed a farmer-centric platform to eliminate middlemen, enabling direct transactions between farmers and consumers.

· Built a scalable backend with Spring Boot and Hibernate, deployed on AWS EC2.

· Integrated Apache Kafka for real-time, reliable data streaming.

· Increased farmer income by providing better prices and transaction transparency.

Employee Management System **[August 2023 - September 2023]**

Python, Django, MySQL

· Engineered a secure role-based web system for managing departments, designations, and employee records.

· Optimized CRUD operations using Django ORM, reducing database query time by ~30%.

· Designed a modular architecture supporting OTP-based authentication in future updates.

Certifications

- Networking Basics - Cisco networking academy [22 Hours]
- AWS Cloud Foundations, AIML Virtual Internship – Eduskills [Oct – Dec 2024]
- Python in Data Science, Database Management Systems – NPTEL [Jul-Aug 2024, Jan-Mar 2025]
- Python & C – Udemy [22.5 Hours]
- C++ – Scaler [Jan- April 2024]

Achievements & Roles

- **Corporate Head –** SRM Data Science Club: Directed corporate outreach and partnerships, driving sponsorship acquisition and event success.
- **College Coordinator** – SRM Paarivendhar Student Association: Coordinated activities impacting 500+ students.

- **SIH 2024,2025 Finalist** – Recognised for developing a national-level agricultural platform.

Languages

English [Professional Working Proficiency], Tamil [Native Proficiency], Hindi [Reading & Writing Proficiency]
