

Steve Alex Mathew

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Summary

B.Tech graduate (CS — Data Science) from Vellore Institute of Technology with a published patent and a peer-reviewed conference publication at ICITIIT 2026 (IIIT Kottayam). Experienced across the data stack — building ML pipelines, analytical dashboards, and data-driven full-stack applications spanning network security, precision agriculture, and generative AI. Comfortable with Python, SQL, and cloud tooling from raw data ingestion through to production deployment. Seeking a data scientist, data analyst, or data engineer role where technical depth drives measurable impact.

Patents & Publications

Adaptive Ensemble System for Imbalanced Network Intrusion Detection *Patent Published, 2026*
Application No. 202641076771 (Filed 21-06-2026) — Ensemble architecture combining gradient-boosted trees with a simulated-annealing optimised classifier operating in parallel on live network traffic data.

AI-Powered Smart Shoebox Designer with Privacy-First Personalization *March 2026*
Accepted & Presented — ICITIIT 2026, IIIT Kottayam, India
Generative AI pipeline for personalised product design using Stable Diffusion and Google Vertex AI with GPU-optimised inference.

Projects

Quantum-Inspired Unified Threat Monitoring System *2026*
ML & Data Systems Lead *Python, XGBoost, scikit-learn, Flask, React 19, SQLite*
Patent Published — Ensemble Architecture (App. No. 202641076771)

Parallelised intrusion detection pipeline combining gradient-boosted trees, Shannon entropy scoring, and a simulated-annealing classifier on live network traffic (subject of a published patent application). Includes a training-free adaptive risk layer that recalibrates on live FP/FN signals, backed by a Flask REST API and React dashboard with live packet monitoring.

CropShield — ML-Driven Pesticide Dosage Optimisation *2026*
Individual Contributor (End-to-End) *Python, XGBoost, SciPy, Streamlit, Plotly*

Extracted and structured regulatory pesticide data from Government of India PDFs to train an XGBoost dosage recommender. A SciPy LP layer constrains outputs within legally mandated bounds by crop type and irrigation method; deployed as an interactive Streamlit app.

Photo Face Gallery Generator — Unsupervised Identity Clustering *2026*
Individual Contributor (End-to-End) *Python, InsightFace, ArcFace, DBSCAN, ONNX Runtime*

Privacy-preserving photo organiser using GPU-accelerated ArcFace embeddings clustered via DBSCAN into a browsable HTML gallery, with an incremental disk cache to handle large libraries without reprocessing.

Loan Tracker — Personal Instant-Loan Analytics Dashboard *2026*
Individual Contributor (End-to-End) *Python, FastAPI, SQLAlchemy, React 19, Vite, Recharts*

Full-stack financial dashboard with a FastAPI REST backend, SQLite persistence, and a React frontend featuring a custom SVG loan timeline and animated repayment progress charts.

Education

Vellore Institute of Technology (VIT) *June 2026*
B.Tech in Computer Science Engineering (Data Science) *Vellore, India*
CGPA: 7.58 / 10

Delhi Private School *June 2022*
Grade 12 (CBSE) Percentage: 81.2% *Sharjah, United Arab Emirates*

Technical Skills

Languages: Python, R, SQL

ML & AI Frameworks: PyTorch, TensorFlow, XGBoost, scikit-learn, ONNX Runtime, Stable Diffusion

Data & Visualisation: Pandas, NumPy, Plotly, Tableau, Power BI

Backend, Frontend & Tools: FastAPI, Flask, React 19, Streamlit, Git, GitHub

Certifications

Microsoft DP-900: Azure Data Fundamentals (2025) | FacePrep Problem Solvers Certification (2025) | IBM What is Data Science? — Coursera (May 2026) | IBM Tools for Data Science — Coursera (June 2026)