

# Gabriel James

AI & Machine Learning Engineer | ML · Python · Cloud

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## PROFESSIONAL EXPERIENCE

### AI Project Lead – Team Arete (Hackathon Research Team)

Government Engineering College Thrissur

04/2025 – Present

- Led a multidisciplinary team building **production-grade AI systems**, including a **real-time crowd risk detection platform** and a **legal document processing engine**.
- Owned system design and ML direction**, unblocking implementation issues to deliver **end-to-end solutions**.
- Achieved **Top 6 at HackOdisha 5.0** and **Top 15 at HackHazards '25** (17,000+ teams).

### AI & Machine Learning Engineer

Independent / Open Source

2024 – Present

- Built **end-to-end ML pipelines** across **NLP, computer vision, and time-series tasks**, from data ingestion to evaluation.
- Integrated **LLM APIs** into backend services with attention to **latency, prompt design, and failure handling**.
- Developed **reusable Python data-processing utilities** to standardize experimentation and speed up iteration.

### Campus Ambassador

Namespace

11/2025 – Present

- Represented a **global developer ecosystem platform** on campus, driving **student adoption and engagement**.
- Organized **demos, webinars, and outreach activities**, collaborating with student clubs and faculty to grow the **local developer community**.

### Student Developer

IEEE Computer Society, GEC Thrissur

12/2024 – Present

- Conducted **hands-on workshops** on **machine learning** and **Git-based collaboration**.
- Mentored peers on **practical ML implementation, debugging, and project workflows**.

## EDUCATION

### Bachelor of Technology in Computer Science and Engineering

Government Engineering College, Thrissur

2024 – 2028

CGPA: 9.89/10

## TECHNICAL SKILLS

### Languages & Tools

Python, Java, C, TypeScript, SQL, Flask, React, Next.js, Git, Docker

### AI/ML & Data Science

TensorFlow, PyTorch, NumPy, Pandas, scikit-learn, OpenCV, NLP, YOLOv8, PCA, Predictive Modeling

### Databases & Cloud

PostgreSQL, SQLite, AWS, Supabase, CI/CD

## PROJECTS

### Market Volatility Spike Detector

Statistical ML & Time Series | Python · NumPy · Pandas · SciPy · Flask

- Built a **multivariate anomaly detection system** using **Rolling Gaussian models** and **Mahalanobis distance** for market stress detection.
- Modeled joint behavior of **returns, volatility, volume, and [return]**, flagging the **top 0.5% extreme events** via percentile thresholds.
- Validated detections against real-world market shocks** (COVID crash, SVB collapse, major Fed actions) using interactive visualizations.

### XENIA – AI-Powered Study Suite

Applied ML + LLM Systems | Gemini 2.5 Flash · Flask · Next.js · Python

- Designed an **AI pipeline for syllabus parsing, difficulty estimation, and adaptive plan generation**.
- Implemented **analytics-driven regeneration** using performance signals and weak-area detection.
- Achieved **<2s plan generation, 95% quiz relevance, and 87% 30-day retention**.

### Stampede Predictor

Computer Vision & Real-Time ML | YOLOv8 · OpenCV · Python

- Developed a **real-time crowd density and risk prediction system** using object detection and spatial grid analysis.
- Implemented **multi-tier risk classification** with spatio-temporal aggregation and live alerts.
- Achieved **~30 ms/frame inference** and **Top 15 / 17,000+ teams** at HackHazards '25.

### ATHENIS – Legal Document Simplifier

NLP & ML Systems | PyTorch · Transformers · Flask

- Built an **AI engine for clause-level legal simplification and risk classification** using transformer embeddings.
- Combined **rule-based heuristics + LLM inference** for higher precision.
- Top 6 finalist** at HackOdisha 5.0 (500K+ participants).

### Selected:

Smart Investment Advisor (Ensemble ML, HMM regime detection), Trading Strategy (PCA & backtesting)

## CERTIFICATIONS

**Machine Learning Specialization (Stanford & DeepLearning.AI)** · **Advanced Learning Algorithms (Stanford)** · **Generative AI Engineering & Fine-Tuning Transformers (IBM)** · **AWS Cloud Practitioner (AWS)** · **Financial Markets (Yale)**

## ACHIEVEMENTS & LEADERSHIP

**Winner — Srishti 2025 (XENIA) · ₹10,000 cash prize**