

# Naman Lazarus

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## Education

**Master of Science in Computer Science** | Northeastern University, Boston, MA

Sep 2025 - April 2027

**Bachelor of Engineering in Information Technology** | University of Mumbai, Mumbai, India

Aug 2016 - Oct 2020

## Work Experience

**Ernst & Young** | Machine Learning Engineer | Pune, India

Sep 2024 - Aug 2025

- Built a writer-independent signature verification system using a **two-stage Siamese network** with **Spatial Transformers** module and Focal Loss in **TensorFlow**, achieving 6% False Rejection Rate (FRR), 2% False Acceptance Rate (FAR), and 98% accuracy.
- Architected an **insider threat detection system** for a U.S. tier-one bank using **PyTorch Geometric-based graph autoencoders** and **PROPHET** time-series modeling, increasing detection speed by 60% and reducing false positives by 37%.
- Designed a **RAG framework with recursive multi-level segmentation** and feedback loops using **LangChain** for **SQL data lineage auditing**, reducing query deflection by 85% and boosting Precision@K, Recall@K, and MRR 75%+.
- Led the development of a KYC platform with offline signature verification, **FaceNet**-based facial verification, and an **LLM agent-based orchestration workflow** for PEP/adverse media screening using **CrewAI**, securing deals with two U.S. banks.

**Tata Consultancy Services** | Machine Learning Engineer - ignio | Pune, India

Nov 2020 - Sep 2024

- Developed a natural language-driven **counterfactual analysis engine** for an observability platform with **fine-tuned Sentence Transformers** and a **multi-agent reasoning network**, allowing C-suite users to query and explore hypothetical system states.
- Implemented an **interpretable Random Forest** framework in **SKLearn** with **SHAP** and **Gini-based feature attribution** plus **rule-path visualization**, improving stakeholder trust and regulatory audit readiness across the product's predictive modules.
- Built a frequent-pattern mining engine using a **custom tree ensemble** to detect enterprise security compliance bottlenecks, **reducing mean-time-to-remediate (MTTR) by 73%** and enabling remediation of security gaps.
- Engineered a **vulnerability exploit-prediction module** using threat-intelligence signals from MITRE CVE, CISA KEV, CPE, NVD, and ExploitDB, achieving **~64% recall** and **~75% precision** at a 50% confidence threshold.
- Engineered a **content-based recommender engine** to accelerate enterprise security hardening by **15–20%**, recommending controls tailored to business context and historical actions.

**Tata Institute of Fundamental Research** | Deep Learning Intern | Mumbai, India

Jul 2019 - Oct 2020

- Developed a **custom OCR pipeline** for low-resource handwritten scripts using **Connected Component Labeling**, **Histogram Projection**, and **K-means Clustering**, paired with a custom **CNN** in TensorFlow for character recognition. Achieved accurate conjunct segmentation with an average **CER of ~8%**.
- Built an end-to-end **annotation-to-inference software suite** in **Qt**, streamlining data labeling, training, and inference workflows, reducing researcher preparation time and enabling faster model iteration.
- Engineered a **serverless AWS data pipeline** for free-form Personally Identifying Information (PII) detection on financial contracts using a **locally hosted transformer model**, **reducing manual review time by 75%** with **98% detection accuracy**.

## Skills

**Languages:** Python, R, C++, Java, JavaScript, Scala, SQL, Dart

**ML Frameworks:** PyTorch, TensorFlow, scikit-learn, XGBoost, LightGBM, Hugging Face, LangChain, LangGraph, CrewAI, AutoGen

**ML Systems & MLOps:** MLflow, Spark, Databricks, Airflow, Docker, Kubernetes (for Kubeflow/Vertex AI), FastAPI, MLOps

**Specialties:** Multimodal AI, Deep Learning, NLP, Computer Vision, Agentic AI, Statistical Modeling, Graph ML, Large Language Models

**Cloud Platforms:** AWS, Azure, GCP (for Vertex AI, BigQuery, Dataproc)

**Other Tools:** Git, Pandas, NumPy, Vector Databases, matplotlib, seaborn

## Research Publications (*First Author*)

**Handwritten Gujarati Script Recognition - WRFER 2020 – World Research Forum for Engineers and Researchers** ([\[link\]](#)).

## Selected Achievements

- **EY Spot Award (2025)** - Honored by Span Head for leading the development of a high-impact asset that strengthened business engagement with multiple top-tier U.S. financial institutions.
- **Winner - Digitate Ideathon (2023)** - Secured **1st place among 111+ teams** in an enterprise-wide innovation hackathon by developing an **LLM-based customer support assistant** ([\[link\]](#)).
- **Finalist - Smart India Hackathon (2019)** - Among the top 4 teams in the country in the hackathon conducted by the Indian Government ([\[link\]](#)).