

Samuel Jeromiah Gnanam

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EDUCATION

The Roux Institute at Northeastern University

GPA: 4.0/4.0

Khoury College of Computer Sciences, Master of Science in Artificial Intelligence

Related courses: Foundation of AI, Algorithms, Programming Design Paradigm, Machine Learning

Anna University

GPA: 3.2/4.0

Bachelor of Technology in Artificial Intelligence and Data Science

Related courses: Reinforcement Learning, Natural Language Processing, Deep Learning Techniques

TECHNICAL SKILLS & COMPETENCIES

AI/ML: Fine-Tuning LLMs, Prompt Engineering, RAG Pipelines, Agentic AI, Multi-Agent Orchestration, LangChain, OpenAI API

Deep Learning: PyTorch, TensorFlow, CNNs, Transformers, HuggingFace, Computer Vision, NLP, Reinforcement Learning

MLOps & Cloud: MLflow, Docker, FastAPI, AWS, GCP, Azure, CI/CD, Model Versioning, Experiment Tracking, Containerization

Languages: Python, SQL, Java, JavaScript, TypeScript, C, HTML/CSS

Databases: MySQL, MongoDB, PostgreSQL, Relational DB Design

Data Science: Pandas, NumPy, Matplotlib, Seaborn, Scikit-learn, Statistical Analysis, Predictive Modeling, SMOTE, A/B Testing

Frameworks: Flask, Streamlit, Spring Boot, Angular, Bootstrap

Tools: Git/GitHub, Jupyter Notebook, RESTful APIs, MS Excel

Certifications: Data Science, Computer Vision, Robotic Process Automation & IoT Foundation – Infosys

WORK EXPERIENCE

Northeastern University Working Lab – AI/ML Engineer, Client: IDEXX Laboratories

Jan 2025 – Present

- Developing AI/ML solutions for veterinary healthcare data as part of Northeastern's Working Lab program

BSNL (Bharat Sanchar Nigam Limited), Chennai, India – Data Networking Intern

Jul 2024 – Aug 2024

- Diagnosed and resolved 15 network connectivity issues affecting data transmission speeds, improving efficiency by 8% across telecommunication channels
- Analyzed and optimized network infrastructure configurations supporting telecom operations, ensuring system reliability

Nuray Chemicals Private Limited, Chennai, India – IT Operations Data Systems Intern

Jul 2023 – Aug 2023

- Achieved automated data logging and storage for pharmaceutical operations by designing and deploying environmental monitoring systems establishing LAN connectivity to servers
- Ensured accurate real-time quality control data transmission by calibrating analytical instruments, proactively troubleshooting and resolving logging failures

InterPe, Chennai, India – Software Development Intern

Jul 2022 – Aug 2022

- Strengthened code maintainability and reduced debugging time by implementing systematic code review processes and applying OOP principles across 5 Java applications through Agile scrum collaboration
- Delivered software solutions within project deadlines by collaborating with a 6-member cross-functional team to implement features, troubleshoot technical issues, and ensure seamless integration

ACADEMIC PROJECTS

ChestAI – Medical Image Classification System

Jan 2026 – Feb 2026

- Engineered multi-label chest X-ray classification model using PyTorch, ResNet-50, and CNNs processing **223K+ images** achieving 0.87 AUC across 14 disease categories reducing manual diagnostic time by 40% with Grad-CAM explainability
- Deployed production ML pipeline with data preprocessing, hyperparameter tuning, and FastAPI for real-time inference achieving **sub-200ms** response time supporting clinical decision-making

DataLink – ML Entity Resolution & Data Quality Dashboard

Jan 2026 – Feb 2026

- Built end-to-end probabilistic record linkage pipeline using Splink, DuckDB, and Scikit-learn ensemble achieving **99.95% F1 score** resolving **4,963 matched entities** from 126,168 candidate pairs, deployed as a full-stack FastAPI and Next.js application with interactive AUC-ROC evaluation and data quality dashboards on Vercel

Employee Management System – Full Stack Application

Sep 2025 – Dec 2025

- Architected full-stack CRUD application integrating Spring Boot backend with Angular frontend, implementing database operations, exception handling, and CORS managing **1,000+ employee records**, reducing administrative overhead by 50%
- Developed responsive application using Angular, Bootstrap, and RxJS with dynamic routing and HTTP services improving data access efficiency by 70% supporting HR automation

Credit Card Fraud Detection System – Machine Learning Application

Sep 2025 – Dec 2025

- Engineered XGBoost classifier achieving **99.6% accuracy** on **1.3M+ transactions**, developing 31 custom features capturing spending patterns and temporal anomalies utilizing SMOTE, delivering \$2M+ fraud prevention value
- Deployed production Streamlit application providing real-time fraud prediction with explainable AI reasoning and risk visualization dashboards serving **10K+ daily predictions**, reducing manual review time by 60%

Patient Sentiment Analysis – NLP Healthcare Application

Jun 2023 – Sep 2023

- Developed sentiment analysis pipeline processing **10,000+ patient reviews** using Flask, Python, and MongoDB, implementing web scraping and text preprocessing extracting pharmaceutical insights improving drug safety monitoring by 45%
- Deployed NLP models classifying patient sentiment with **85% accuracy**, automatically summarizing drug descriptions supporting healthcare decision-making and reducing manual review time by 55%

Smart Blind Navigation Kit – AI-Powered IoT System

Jul 2021 – Oct 2021

- Won **1st Prize** at National Science Day Expo engineering real-time AI navigation with Arduino, Raspberry Pi, GPS and obstacle detection, improving visually impaired mobility by **80%**