

Aniket Ghosh

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Education

Northeastern University, Boston, MA, USA

Aug 2025 - May 2027

Master of Science in Artificial Intelligence (ML Concentration) - GPA: 4.0/4.0 - 15% Merit Scholarship

Courses: Foundations of AI, Algorithms, Actionable Interpretable Methods, Applied Programming for AI

Institute of Engineering & Management, Kolkata, India

Jul 2020 - Jun 2024

Bachelor of Technology in CS & Business Systems - GPA: 4.0/4.0 - **Ranked 2nd/180 - Director's Award**

Key Courses: Data Structures, Operating Systems, Database Management, Neural Networks, NLP

Technical Skills

Programming Languages: Python, C/C++, Java, JavaScript, SQL, HTML/CSS

LLM & Gen AI: RAG, ChromaDB, OpenRouter, OpenAI/Anthropic APIs, LoRA/QLoRA, Hugging Face

AI Agents & Orchestration: OpenAI Agents SDK, CrewAI, AutoGen, LangChain, LangGraph, MCP, Function Calling

ML Frameworks: PyTorch, TensorFlow, Keras, scikit-learn, YOLOv8, CNNs, Transformers, U-Net

MLOps & Cloud: AWS (Bedrock, SageMaker, Lambda, S3), Azure, GCP, Docker, Terraform, GitHub Actions, MLflow

Specializations: Computer Vision, Deep Learning, Medical Image Analysis, NLP, Explainable AI

Experience

Teaching Assistant – Natural Language Processing (Graduate Course)

Aug 2025 – Present

Northeastern University, Boston

Instructor: Prof. Amir Tahmasebi

- Lead weekly lab sessions teaching 40+ students PyTorch fundamentals, ML/DL architectures, Word2Vec embeddings, and Named Entity Recognition implementations, resulting in 95% lab completion rates
- Grade assignments and provide detailed feedback on NLP projects; hold office hours to clarify transformer architectures and attention mechanisms, improving average student comprehension scores by 20%

Researcher & Research Mentor

Mar 2024 – May 2025

CMATER Lab, Jadavpur University, Kolkata

- Developed custom ML pipelines for cell segmentation in histopathological images under Dr. Roy and Dr. Bhattacharjee, achieving 85%+ accuracy on overlapping cellular structures across multiple cell lines
- Implemented preprocessing techniques using color quantization and DBSCAN clustering for densely packed cell detection, reducing false positive rates by 30% compared to baseline Mask R-CNN
- Guided 3 junior researchers in deep learning for medical imaging; conducted weekly literature review sessions that accelerated their project timelines by 2 months

Research Intern

Feb 2023 – Jul 2023

North-Eastern Hill University (Remote)

- Contributed to developing Indian Sign Language dataset by defining quality criteria and annotation standards; analyzed Microsoft ASL, MNIST, and Static ISL datasets to establish best practices, resulting in 15% improvement in dataset consistency

Industrial Trainee

Dec 2022 – Jan 2023

Novotel Kolkata

- Facilitated IT system migration from local servers to Oracle cloud infrastructure supporting 1000+ rooms; reduced system downtime by 40% during peak operations through optimized deployment scheduling

Projects

Biomedical Knowledge Graph Link Prediction

GitHub

- Built link prediction on BioRED corpus (3,783 entities, 8 relation types); Random Forest achieved **0.94 ROC-AUC**, outperforming TransE/ RotatE/ ComplEx embeddings by 23%+ using engineered graph features (PageRank, Preferential Attachment)
- Implemented multi-hop reasoning (up to 5 hops) for explainable drug-gene-disease relationship discovery via NetworkX

Autonomous Multi-Agent Trading Simulation

GitHub

- Built trading simulation with **4 AI traders, 6 MCP servers, 44 tools** using OpenAI Agents SDK; integrated Polygon.io, Brave Search, and LibSQL for autonomous portfolio management (\$10K each)
- Developed real-time Gradio dashboard with P&L monitoring, transaction history, and custom tracing for agent activity

Intelligent Traffic Sign Detection System

Published at AISC 2024

- Integrated YOLOv8 with custom CNN filtering layer; trained on Berkeley, fine-tuned on IIIT Hyderabad dataset for Indian road conditions; published in Springer's "Information and Communication Technologies" series