

DEEPANSHU MODY

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EDUCATION

NEW YORK UNIVERSITY

Master of Science, Data Science

New York, NY

Aug 2024 - May 2026

Activities and Societies: 2nd position - AI4Purpose Hackathon; Research Mentor - Roaring Cubs Collective;

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI

Bachelor of Engineering, Computer Science (Integrated Dual Degree)

Pilani, India

Aug 2018 - Jun 2023

WORK EXPERIENCE

PFIZER

Statistics & AI/ML Intern

Boston, MA

Jun 2025 - August 2025

- Built a LangGraph multi-agent workflow with end-to-end reasoning and tool use, testing latency, usage and system reliability
- Extended and productionized the system with a Neo4j knowledge graph for drug-target-indication analytics and modeling evidence-weighted relationships

INCEDO INC.

Data Scientist | Software Engineer - Data & AI

Gurugram, India

Jul 2023 - Jul 2024

- Built and owned the backend for a production-grade LangChain RAG document-QA system on Azure ML Studio, serving 1,200 technical manuals; delivered 92.0 token-level F1 with sub-200 ms p50 latency using INT8 inference and hybrid BM25 + dense + cross-encoder retrieval

KINARA AI (NOW ACQUIRED BY NXP SEMICONDUCTORS)

Software Engineering Intern

Hyderabad, India

Jan 2023 - Jun 2023

- Prototyped a RISC-V vector extension and LLVM backend, implementing scatter/gather intrinsics to deliver 1.7x GEMM throughput and -34% ResNet-50 latency in cycle-accurate sims

RESEARCH EXPERIENCE

KENSHO

Capstone Project, Advisor: Dr. Chris Tanner (Kensho & MIT EECS)

Remote

Sep 2025 - Present

- Designed and implemented Markov Chain Monte Carlo and Reinforcement Learning approaches for globally optimizing BPE tokenization (entropy + compression objectives) training on MiniPile corpus

NYU GROSSMAN SCHOOL OF MEDICINE

Graduate Research Assistant, Advisor: Dr. Yiqiu Shen

New York, NY

Apr 2025 - Jun 2025

- Curated a longitudinal imaging cohort of $\approx 2k$ abdominal CT scans from $\approx 80k$ patients with acute pancreatitis, linked to 3-year follow-up data on progression to chronic disease; built a DICOM-to-NifTI pipeline with automated PHI stripping

PURDUE UNIVERSITY ([Web App](#) and [Code](#))

Research Intern, Advisor: Dr. Daisuke Kihara

West Lafayette, IN

Jun 2022 - Dec 2022

- Developed 2 GNNs (GCN, GNN-DTI) for RNA metal-ion binding, gaining +6.2pp ROC-AUC over a CNN on 6.4k PDB structures
- Built a GPU-accelerated PyG stack on SLURM and a DGL graph-builder that cut preprocessing 5 \times and streamed 1.1M edges/s, enabling 128-config sweeps overnight

INDEPENDENT RESEARCH PROJECT

Planned submission: Actionable Interpretability Workshop @ ICML 2026

- Implemented large-scale, distributed evaluation on Google Cloud TPU v6e, enabling high-throughput residual stream activation tracing and prompt scoring and developed a baseline for minimum-activation prompt discovery

PUBLICATIONS AND CONFERENCES

- **Auto Encoders for Communication-Efficient Distributed Learning** - Proposed a novel method using autoencoders to optimize distributed learning. Presented at **AAAI Deployable AI Workshop (2023)** ([Link](#))
- **Validity of Machine Learning-Based COVID-19 Prediction** - Benchmarked 7 hematology-based COVID-19 prognostic models on 195k patient records from Brazil, Italy & Western Europe, uncovering a $\sim 20\%$ AUROC drop in cross-continental transfer; released open-source validation toolkit. Published in **PLOS ONE (2025)** ([Website](#), [Code](#) and [Link](#))

ADDITIONAL

Technical Skills: SQL, Python, Azure, AWS, Git, C++, C, Java, PyTorch, Keras, Django, Flask, LaTeX, Neo4j