

Vishvesh Trivedi

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EDUCATION

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|---|--|------------------------|
| New York University (2024-26) | Master of Science in Computer Science | GPA : 4.0/4.0 |
| National Institute of Technology, Surat (2020-24) | Bachelor of Technology in Computer Science & Engineering | CGPA: 9.07/10.0 |

EXPERIENCE

Medical AI Research Assistant | *Bio-DaSH Lab, NYU Langone Health* Nov 2024 – Present

- Working towards real-time detection of performance degradation in >15 AI tools deployed at NYU Langone Health.
- Developing scalable data pipelines to preprocess large-scale EHR data (>280 million entries) using Big Data tools.
- Applying statistical and algorithmic modeling techniques to identify root cause of performance drop over time.

AI/ML Research Engineer Intern | *CVIT, IIT Hyderabad* Jan 2024 – Sep 2024

- Developed modular pipelines to generate 100% synthetic lecture slides to train large VLMs on downstream document tasks.
- Wrote over >5,000 lines of OOPs-supported, extensible, and portable Python code along with comprehensive documentation.
- Utilized PEFT like Prompt Tuning, qLORA to fine-tune large VLMs namely LayoutLMv3, DETR, and LLaVa on synthetic data.
- Conducted extensive experiments to showcase improvement in downstream performance. Submitted to ICDAR 2025.

Data Analyst Intern | *Wells Fargo* May 2023 – Jul 2023

- Orchestrated a web-based AI-powered internal company tool that produces semantic-aware audio-transcriptions of PPT presentations that is 1.3x faster than traditional screen-readers, and produces superior quality transcriptions.
- Fine-tuned Neural captioning models on proprietary dataset to improve captioning results by over 40 pts
- Contributed in deploying the tool that directly impacts around 15,000 VI Wells-Fargo employees worldwide
- Completed online certifications on ML-Ops best practices, Data Governance, Agile, and Scrum methodologies
- Spearheaded the team showcase event and received a full-time return offer on internship completion. [\[Design Doc\]](#)

PROJECTS

ClinicalML : Can traditional ML match LLM performance for clinical outcome prediction? [\[Code\]](#) [\[Report\]](#) Nov 2024

Python, Pandas/Polars, Numpy, Sci-kit learn, Docker, MySQL, EHR

- Investigated whether traditional Machine learning models can match SOTA medical LLMs in clinical outcome prediction tasks.
- Using MIMIC-III cohort, engineered low-dimensional feature representations of drugs and diseases using k-NN clustering.
- Trained 4 classical ML families (Regressors, Boosters, Bagging, ANN) and visualized results using t-SNE, UMAP, and Word Clouds.
- Findings indicate only 9% (0.64 vs 0.58 Marco-F1) and 13% (0.38 vs 0.33 Marco-F1) performance gap between SOTA medical LLMs and best ML model for Mortality and Length-of-Stay prediction respectively.

pptGEN: generating synthetic lecture slides on-the-fly as you speak! [\[Code\]](#) [\[Demo\]](#) [\[Docs\]](#) Jul 2024

python-pptx, Langchain Deepgram API, OpenAI Embeddings, Python, Bash

- Built an end-to-end executable application that can generate a lecture slide within 15 seconds as the professor speaks.
- Devised a lightweight, modular pipeline that generates coherent multimodal content using LLMs, automatically assigns slide-layout, and preserves presentation style for each slide.

mailAssist - RAG-assisted LLM app for real-time tracking of emails [\[Code\]](#) [\[Demo\]](#) Mar 2023

Pathway engine, Python, OpenAI APIs, Docker, Google Cloud APIs, DropBox APIs

- Devised an AI-chat application that summarizes daily-mails and answer questions based on individual mails thereby reducing mail-screen time by half (50%) on average.
- Uses Pathway engine to trigger automated workflows for real-time data processing; reducing latency by 15%.

RESEARCH WORK

Towards synthetic data augmentation for Lecture Slide Understanding | *Under Submission at ICDAR 2025* Jan 2025

ClinicalML : Can traditional ML match LLM performance for clinical outcome prediction? | Nov 2024

Recognition and VQA on Handwritten Documents at ICDAR 2024 Competition (Winner) [Certificate](#) | ICDAR 2024 Mar 2024

TECHNICAL SKILLS

Languages : Python, R, C/C++, Java, Shell Scripting, SQL (Postgres, MySQL), JavaScript, HTML+CSS, JSON,

Frameworks TensorFlow, Pytorch, Scikit-learn, Langchain, Numpy, Matplotlib, Hugging Face, React, OpenCV

DevOps and API Tools : Git, Docker, REST APIs, CI/CD Tools (GitHub Actions), Azure DevOps, Postman, DVC, SOAP

Cloud and Database : GCP, Google Vertex, AWS, Azure Cloud, MongoDB, Redis, SQL, NoSQL, PostgreSQL, Apache Hadoop/Spark

Others : Full Stack, Linux Tools, Debugging, Root Cause Analysis, Open-Source, CUDA, SaaS, GPU, Deep Learning, Automation Solutions

Soft Skills : Cross-Functional, Leadership, Problem-Solving, Effective Communication skills, Team Player, Goal-Oriented

Coursework : Operating Systems, Data Structures & Algorithms, Statistics, Mathematics, Data Science, Computer Vision, NLP