

Vivek Modi

vivekvm84001@gmail.com | +12679285072 | github.com/viper-vm | [in/vivek-modi1](https://in.vivek-modi1)

Education

MS in Computer Science
B.Tech in Computer Science

Rutgers University
Indian Institute of Technology, Gandhinagar

2022 - 2024
2018 - 2022

Skills

- **Languages:** Python, C, Java, C++, JavaScript, React.js, Node.js, HTML, CSS, ML, NLP, MLOps, OAuth 2.0
- **Framework:** Langchain, PyTorch, Tensorflow, PySpark, Scikit-Learn, Pandas, Numpy, Matplotlib, Huggingface
- **Technology:** LLM, Generative AI, RAG, Fine-Tune, PEFT, LoRA, Kafka, Argo, Jenkins
- **Tools:** MySQL, Django, Flask, Latex, AWS, MongoDB, Docker, Jira, Git, CI/CD
- **Core Expertise:** Distributed systems, OAuth-based auth, observability, fault tolerance, scalable microservices

Professional Experience

- **Software Engineer – GenAI/ML, Optimoz, Rockville, MD** [May, 2024 - Present]
 - Spearheaded UI-driven citation rendering using JavaScript and integrated contextual graph visualizations using Plotly, enhancing the explainability of LLM outputs.
 - Led OAuth 2.0 integration with ICAM (Identity and Credential Access Management) using Java for secure client registration and token lifecycle management.
 - Built and optimized end-to-end full-stack features (citation indexing, context-based charting) for Optalk.ai, reducing latency by 85% through backend refactors.
 - Leveraged Kafka and Docker to ensure scalable communication between microservices, and enabled continuous deployment through Jenkins pipelines.
 - Designed and deployed custom LLM-based backend pipelines with Retrieval-Augmented Generation (RAG) and LangGraph for enhanced information retrieval.
- **Graduate Research Assistant, Machine Learning & Bioinformatics Lab, Rutgers University** [Jan, 2023 - May, 2024]
 - Initiated a comprehensive deep learning pipeline to identify human activities, enhancing machine's understanding of complex movements.
 - Streamlined a ML learning-based pipeline to identify protein subcellular sequences working under the guidance of Dr. Iman Dehzangi.
- **Machine Learning Intern, Capgemini, Gandhinagar, India** [May, 2020-Aug, 2020]
 - Developed 'Priority Mailbox' and Sentiment Analysis COM add-in for Microsoft Office Outlook, streamlining email management and improved user experience by utilizing sentiment analysis to prioritize mails.
 - Employed Django, ML algorithms utilizing two distinct models, and SQLite database as the core technologies, Improved mail prioritization using multiple parameters, including initial click time and mail read duration.
 - Contributed a pivotal role in optimizing mail organization and enhancing productivity within Outlook.

Projects

- **NLP research paper “ComicBot: ChatBot Generating Jokes along with GIF”** [Aug, 2020-Jan, 2021]
 - Authored an innovative research paper focused on creating jokes paired with GIFs utilizing the knowBERT model.
 - Implemented sarcasm recognition and emotional classification system to align GIFs with corresponding sentiment with most related GIFs.
 - Introduced "EmotionGIF," a novel dataset curated to categorize GIFs based on emotive labels and proposed a unique style transfer methodology for producing humorous content.
- **Mini StackOverflow with Flask + React**
 - Developed a production-ready Q&A platform with frontend-backend decoupling and performance benchmarking using Mininet.
 - Implemented role-based access, efficient search, and MySQL-backed persistent storage.
- **Tech Impact – Shift Management System**
 - Built real-time shift scheduler for volunteers with Node.js and React; enhanced availability monitoring with backend alerts and email notifications.
- **MacroHard – E-Commerce for Academic Projects**
 - Leveraged multiple AWS services for scalable hosting and database operations, designed fault-tolerant deployment for global user base.

Achievements

- **Vice President**, Graduate Student Organization, Rutgers University.
- **Teaching Assistant** at LEAP Academy University Charter School, New Jersey.
- Secured an **All India Rank of 701** out of 1.3 million students in the JEE ADVANCED 2018.
- Ranked **4th** in **INTER IIT Tech meet** at IIT Bombay for Campus Sustainability Challenge.