

Abhinav Aditya

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EDUCATION

Northeastern University, Boston, MA

DECEMBER 2026

Master of Science, Data Analytics Engineering GPA 3.947/4

Relevant Courses: Deep Learning for AI, Applied Generative AI, MLOps, Data Management for Analytics, Data Mining in Engineering

Manipal University Jaipur, Jaipur, India

JUNE 2022

Bachelor of Technology, Computer and Communication Engineering CGPA 8.13/10

Relevant Courses: Design & Analysis of Algorithms and DAA Lab, Advanced Data Structure, Machine Learning, ML Lab

PROFESSIONAL EXPERIENCE

Agentdesks Pvt. Ltd., Bengaluru, India (subsidiary of **Radius Agent**, San Francisco)

JUNE 2022 – JUNE 2024

Software Development Engineer

- Led end-to-end development of a generative AI chatbot by fine-tuning OpenAI's **gpt-3.5-turbo** model on **500+ documents**, reducing average response time from **5+ seconds** to less than **3 seconds** using caching
- Optimised **RAG retrieval** by benchmarking embedding dimensions, upgrading from **384 to 1024 after K=3 evaluation** to improve semantic accuracy
- Identified critical user **drop-off points** using **Heap funnels**, then developed a new homepage (NextJS) based on the findings, resulting in a **19% increase** in sign-ups in 3 months
- Architected a CI/CD pipeline using GitHub Actions with **3 parallel jobs** and **esbuild**; implemented automated unit tests and reported **78.3% code coverage** via Codecov, contributing to a **57% reduction** in build time
- Led full-stack revamp of in-house CRM tool serving **1,000+ agents**, **migrating** from VanillaJS to **ReactJS** with **Redux**, integrating 10+ **RESTful APIs**, and improving **lead conversion rate by 17%**
- Collaborated with a **12-person cross-platform team** to develop 'Radius Rooms,' a WebRTC solution using the Agora SDK; supported **100 concurrent users** per room by implementing host, speaker, listener, and screen sharing features, resulting in **500+ monthly active users** and a **6% MoM increase** in user engagement

ACADEMIC PROJECTS

CiteConnect (presented in GoogleExpo at Cambridge, Boston)

SEPTEMBER 2025 - PRESENT

Developing a scalable, end-to-end recommendation system to help researchers discover relevant academic literature through semantic search and citation graph analysis

- Engineered production MLOps pipeline with automated CI/CD using GitHub Actions, deploying dual SentenceTransformer models (MiniLM-L6-v2, SPECTER2) to Google Cloud Run, with real-time model performance **monitoring and automated retraining triggers**
- Designed an adaptive user personalization system with multi-stage user binning and a 6-factor scoring algorithm (semantic similarity, citations, recency, ground truth, reading level, diversity) that dynamically learns user preferences through **click behavior analysis** and **automated weight optimization**
- Open sourcing the platform; developing **funding prediction** features to **assess grant success probability** through citation analysis

BOTBOT - Business Optimisation Transformer BOT

FEBRUARY 2025 – MARCH 2025

Developed a multi-agent chatbot to automate business intelligence insights and visualisations from user-uploaded CSVs using LangChain

- Engineered a multi-agent system with LangChain, using a central **Activation Agent** to **dynamically route** user queries to specialised Data Cleaning, Analysis, and Plotting agents
- Implemented a Pinecone vector store to provide conversational memory, **caching previous queries** to **reduce redundant LLM calls** and **optimise response time** with a similarity threshold of 0.8
- Benchmarked LLM performance** (GPT-4o vs. GPT-4o-mini vs. Gemini) for analytics tasks and **automated insight generation** on any raw sales dataset, identifying **GPT-4o** as the top performer for **graph generation** and insight extraction

Prediction of Insurance Claim

JANUARY 2025 – APRIL 2025

Built predictive models to assess flood claim approval likelihood by merging property data with storm indicators

- Integrated **FEMA's NFIP claims data** with **NOAA storm records** to create a comprehensive merged dataset, cross-referencing building features with storm-related events
- Trained and tuned Logistic Regression, Random Forest, Gradient Boosting, and MLP models using GridSearchCV and SMOTE, achieving **0.96 ROC AUC**
- Visualised model comparison using bar plots and SHAP; interpreted **storm-driven vs structural feature** importance to guide disaster risk pricing

SKILLS

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

Tools: Git, Postman, Tableau, Jupyter Notebook, VSC, Docker, Heap, AWS, GCP, n8n, ELK, Airflow, MLflow, Kafka, Spark

Libraries: NumPy, Pandas, Matplotlib, scikit-learn, Langchain, LangGraph, TensorFlow, PyTorch, python_a2a, Seaborn, Plotly, Folium

Database: MongoDB, Pinecone, MySQL, Django, Neo4j