Ahmad Nadeem

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Summary

A motivated computer science student with hands-on experience in AI and NLP. Worked on a project applying sentiment analysis using LLaMA models and currently collaborating on developing an LLM-based visualization system for human mobility behavior. Skilled in Python, machine learning libraries, and modern AI tools. Interested in applying AI techniques to improve analytical models and support data-driven decision-making.

Education

University of Illinois at Chicago Chicago, IL

B.S. in Computer Science, Minor in Business Administration, Dean's List *Expected Graduation: December 2026*

- **Relevant Coursework:** Applied Statistical Methods I, Data Structures, Software Design, Computer Organization, Languages and Automata, Systems Programming, Introduction to Data Science, Programming Language Design and Implementation

Technical Skills

Programming Languages: Python, C++, R, SQL, JavaScript (React, Node.js), Java, C, HTML/CSS
Data Science & ML: Pandas, NumPy, Scikit-Learn, Matplotlib, Seaborn, Joblib, Streamlit, Jupyter
AI & NLP Tools: LLaMA, Gemini, Deepseek, Ollama, Hugging Face Transformers
Databases & Cloud: MongoDB, Google Cloud, Kubernetes (container orchestration)
Developer Tools: VS Code, PyCharm, Visual Studio, Postman, Git/GitHub

Experience

Undergraduate Research Assistant September 2025 – Present

UIC Electronic Visualization Laboratory *Chicago, IL*

- Developing an LLM-based visualization system that models human mobility behavior using **Large Language Models (LLMs)** and tabular data, enhancing understanding of mobility patterns.
- Implementing analytical nodes (e.g., *Confusion Matrix Node*) in **React** and **TypeScript**, integrated with a **FastAPI** backend for real-time model inference and data visualization.
- Collaborating with researchers to optimize data pipelines and scalability, improving visualization accuracy and system responsiveness across diverse mobility datasets.

AI and NLP Engineering Intern June 2024 – August 2024

University of Illinois at Chicago *Chicago, IL*

- Applied sentiment analysis using **LLaMA 3** models to analyze large-scale vaccine-related tweet datasets, identifying public opinion trends through natural language inference.
- Developed scalable data pipelines leveraging **Kubernetes** and **Jupyter Notebooks** on the Nautilus platform to optimize distributed AI workloads and enhance experiment reproducibility.
- Designed and tested **few-shot** and **zero-shot** learning experiments, refining prompt engineering strategies to improve model interpretability and performance across classification scenarios.

Projects

Economic Data Analysis Dashboard | *Python, Pandas, Scikit-Learn, Streamlit* September 2025 – December 2025

- Analyzed three large datasets (College Scorecard, BLS Employment, Zillow Rent) by performing data cleaning, EDA, and statistical testing to evaluate relationships between debt, wages, employment, and housing costs.
- Built and compared multiple ML models (Linear/Tree Regression, Random Forest, Classification, K-Means) to assess predictive strength, finding weak single-variable predictive power across all datasets.
- Developed an interactive **Streamlit dashboard** with dynamic metrics and visualizations, enabling real-time exploration of majors, occupations, and state-level rent trends.

Air Quality Prediction App | *Python, Scikit-Learn, Pandas, Streamlit, Matplotlib, Seaborn* October 2025

- Developed an end-to-end **machine learning system** to predict **air quality categories** using the Kaggle Air Quality dataset, performing detailed preprocessing, EDA, and feature engineering.
- Trained multiple models including **Logistic Regression, SVM, SGD, GNB, and Decision Tree**, evaluating accuracy and interpretability across pollutants and weather features.
- Deployed an interactive **Streamlit web app** enabling real-time predictions, serialized models with **Joblib**, and visualized performance metrics for model transparency.