Karan Choudhary

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Education

Michigan State University East Lansing, MI
Bachelor of Science, Computer Science, Minor in Cognitive Science, GPA: 3.967 / 4.0 *Expected May 2026*

Experience

Undergraduate Learning Assistant - CSE440 January 2026 – Present
Michigan State University *East Lansing, MI*

- Assisting students with various topics in artificial intelligence covering reinforcement learning to search algorithms
- Grading 200+ assignments, providing feedback in vital topics to help strengthen core fundamentals and overall understanding

IT Intern - Digital Innovation Lab May 2025 – August 2025
Steelcase *Grand Rapids, MI*

- Utilized Databricks and Tableau for data analysis and visualization, transforming complex datasets into clear, accessible insights for everyday users
- Collaborated cross-functionally with data science and data engineering teams to build production-ready tables and streamline code organization for deployment
- Leveraged Scikit-learn for machine learning technique, integrated OpenAI API and utilized PySpark and Pandas for efficient data aggregation and transformation

Software Engineering Fellow August 2024 – September 2024
Headstarter *Remote*

- Developed 5 projects using Next.js, OpenAI, Pinecone, and Stripe API, integrating various technologies
- Mentored by top industry professionals from Amazon, Bloomberg, and Capital One on Agile methodologies, CI/CD processes, Git version control, and microservice architectures

AI Intern July 2024 – September 2024
Sports Media *Remote*

- Utilized machine learning techniques in an audio processing project to enhance real-time voice communication through reduced latency and improved audio quality

Projects

Generative Multi-Modal CAD AI Assistant | *Python, FastAPI, Next.js, LLMs, MCP*

- Engineered a web application with 5 teammates to generate and modify CAD designs via LLMs, providing a multi-conversation interface and a design management system to revert to prior generated designs
- Integrated multimodal LLMs through a FastAPI backend and an MCP server bridging the LLM to FreeCAD, enabling model selection and design generation
- Implemented a multimodal input pipeline and design downloading system, enabling users to download CAD designs at any point in the conversation

Movie Recommender Website | *Python, Streamlit, Scikit-learn, NumPy, Pickle*

- Constructed a movie recommender system wielding Streamlit, enhancing deployment efficiency and accomplishing a 93% user satisfaction rate in recommendation relevance
- Administered Scikit-learn's cosine similarity and TfidfVectorizer for feature vectorization in movie recommendation system reducing computational runtime by 63%

Parking Lot Predictor | *Python, OpenCV, Pickle, NumPy*

- Architected an automated parking lot monitoring system incorporating Python and OpenCV, discerning between occupied and vacant parking spaces through analysis of video feeds resulting in greater accuracy by 35%

Technical Skills & Involvement

Languages: Python, SQL, C++, HTML, CSS, JavaScript
Developer Tools: Git, GitLab, GitHub, AWS, Linux, Databricks, Tableau, Azure DevOps, Postman
Frameworks: Pandas, NumPy, Scikit-learn, Matplotlib, OpenCV, BeautifulSoup, Pickle, Requests, Keras, PySpark, Tqdm, Pydantic, JSON, OpenAI, FastAPI, Next.js
Organizations: EV Scholars, MSU AI Club