Aniket Dixit

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EDUCATION

University of Michigan **Ann Arbor, MI**
B.S in Computer Science, B.S in Linguistics *May 2025*
GPA: 3.56 / 4.00
Coursework: Conversational AI, Introduction to Artificial Intelligence, Database Architecture, Computer Organization, Natural Language Processing, Statistics, Calculus III, Cryptography, Computational Linguistics, Data Structures & Algorithms, Syntax, Mathematics of Linguistics

SKILLS

Programming Languages: Python, SQL (Oracle, PostgresSQL), C/C++, Javascript
Machine Learning: PyTorch, TensorFlow, NLTK, Scikit-learn, Optuna, spacy
Data Science Tools: Tableau, Seaborn, matplotlib, pandas, numPy, MATLAB
Development: REST API, Flask, Prometheus, Kubernetes, Jira, MS Excel, Redis

WORK EXPERIENCE

University of Michigan **Ann Arbor, MI**
Research Assistant - Department of Classical Studies *September 2024 – January 2025*
- Leveraged semantic analysis methodologies to analyze and cross-reference Latin textual variants in Festus' *Farnesianus*, identifying discrepancies between Thewrewk's daggers and Lindsay's corrections, implementing a structured database for systematic documentation.
- Conducted a comprehensive data-driven linguistic modeling and semantic trend analysis to extract and categorize 91 pre-medieval attestations using the Brepols Latin Database, leveraging parsing strategies and identifying undocumented lexical shifts and contextual linguistic evolution.

University of Michigan Museum of Paleontology **Ann Arbor, MI**
Software Engineer *October 2021 – March 2022*
- Designed and deployed a scalable, high-performance Python-based ETL pipeline, leveraging pandas, NumPy, and lxml to extract, clean, and standardize metadata from museum XML files, to facilitate automation for the processing of 5,000+ reconstructed CT fossil scans.
- Engineered and refined 20+ high-precision photogrammetry models utilizing RealityCapture, MeshLab, and OpenCV, optimizing image preprocessing, SfM reconstruction, and mesh refinement. Enhanced overall system efficiency by reducing computational overhead by 40%.
- Optimized database architecture with a dual-layered storage strategy, combining PostgreSQL for structured, persistent storage and Redis as a high-speed caching layer with a 30-second TTL in order to minimize redundant database queries and enhance API responsiveness.

PROJECT EXPERIENCE

LLM Healthcare Navigator **Ann Arbor, MI**
Web Development Lead *January 2025 – Present*
- Engineered real-time user interactions with AJAX-based asynchronous data fetching, localStorage session handling, and event-driven updates, enabling application integration testing for backend efficiency and seamless frontend user experiences without full-page reloads.
- Implemented a responsive UI/UX with flexbox layouts, CSS animations, and JavaScript event handling, creating a multi-page navigation system that enhances platform engineering and IT business analysis by enabling structured data collection and tailored follow-up questions.
- Developed an AI-driven biomedical Q&A system and RAG pipeline using Hugging Face Transformers and Llama 3, optimizing text generation with GPU acceleration and integrating FAISS-based retrieval, improving large-scale data retrieval, and cybersecurity in AI-powered applications.

Quiz Bowl Simulator **Chicago, IL**
Independent Project *August 2023 – Present*
- Engineered and deployed a full-stack Quiz Bowl platform using Flask, JavaScript, and HTML, leveraging RESTful API design and dynamic frontend rendering to optimize user engagement and response accuracy, boosting correct answers per packet in practice by over 25%.
- Engineered a scalable quiz server by developing a Flask API with secure session tracking (UUID4), CORS handling, and structured validation while integrating spaCy's NLP similarity scoring for AI-powered fuzzy answer matching, enhancing software development and automation.
- Implemented a dual-layered database strategy by integrating PostgreSQL for structured, persistent storage and utilizing Redis as a high-speed caching layer with a 30-second TTL, improving API responsiveness to support large-scale, high-performance applications.

LEADERSHIP EXPERIENCE

Inter Cooperative Council **Ann Arbor, MI**
Data Analyst - Board Representative *August 2023 – May 2024*
- Leveraged PostgreSQL and Microsoft Excel Power Query for trend analysis, gathering and assessing survey data on EV and energy management inefficiencies. Applied cost-benefit analysis to get returns of over $5,300 in annual savings for ICC stakeholders and residents.
- Analyzed Michigan state documentation to identify infrastructure issues and key compliance gaps across 20+ ICC residences, applying systematic data evaluation and risk assessment techniques to enhance quality assurance and regulatory compliance in property management.
- Partnered with ICC property managers to implement and communicate best practices, enhancing food safety standards, operational efficiency, and compliance across 20+ ICC properties by integrating data-backed process automation strategies aligned with FDA regulations.