Aren Desai

Madison, WI • akdesai@wisc.edu • (608) 286-9798

arendesai.com/portfolio • github.com/ArenKDesai

Education

University of Wisconsin – Madison   Madison, WI

   Computer Science & Data Science BS. GDSC, dotData, Robotics, and Badminton club member.

Spring 2025

Technical Skills

Programming Languages: Python, SQL, R, Java, C, Matlab

Technologies / Frameworks: MySQL, Docker, ArcGIS, PowerBI, Azure, Excel, Google Suite, Microsoft Suite, Pandas, Django, NumPy, MatPlotLib, Seaborn, FICO DMP, Scikit-Learn, SciPy, PyTorch, Tensorflow, Keras, tkinter, PyGame, ggplot2

Experience

Madison Gas & Electric   Madison, WI

   Energy Supply and Trading Intern   May 2024 – Present

- Revamped the outdated hourly dispatch simulator with **Scikit-Learn optimization routine's GPU-optimized algorithms** and **NumPy matrix multiplications**, speeding up the runtime by **97.3% (https://arendesai/media/MarketSimDocs.md)**
- Built a **Microsoft Power Apps** frontend in Python for the hourly dispatch simulator with **Flask**
- Evolved LMP forecasting algorithm with a **3-dimensional CNN** with **Tensorflow**, decreasing MSE by **7%**

Compeer Financial   Sun Prairie, WI

   Data Analytics Intern   Jan 2023 – Jan 2024

- Queried agricultural field & loan data in **SQL**, organized in **Python** & **R** for **quantitative analysis**.
- Explored implementation of **K-NN grouping** of RAU vs average loans and GPT-3 Gen-AI on Compeer data.
- Facilitated the introduction of **PyTorch** and **Microsoft Azure** into the data warehouse.

Personal Projects

AI Assistant (https://github.com/ArenKDesai/AIAssistant) | *Python, GPT-API, OpenAI-Whisper*   Mar 2024

- Developed real-time **speech processing** with **OpenAI Whisper** into regex-based command detection
- Stylized AI personality with **GPT API** personality prompting and real-time **ElevenLabs** voice creation
- Prototyped hand-detection for AI and music control with **Google's mediapipe**

Fake News Detector (https://devpost.com/software/fake-news-detector-p2b86i) | *Python, Flask, NLTK*   Feb 2023

- Built **SVM**, **Naïve Bayes**, **Decision Tree**, and **PCA** machine learning models in **Python** on natural language.
- Deployed a **Flask** webapp with a sleek user interface and dark mode for user convenience.
- Utilized the **Natural Language Tool Kit (NLTK)** to convert natural language into numerical tensors.

Leadership Experience

Google Developer Student Club   Madison, WI

   Finance Lead / Treasurer   Sep 2023 – May 2024

- Managed the GDSC bank account withdrawals and deposits.
- Communicated fundraisers and sponsorship donations with donors.
- Planned GDSC meetings, tech-talks, and workshops with the GDSC core team, including Cheesehacks.

Compeer Financial   Madison, WI

   College Ambassador   Sep 2023 – May 2024

- Educated UW Madison students on Compeer Financial through in-class demonstrations.
- Acted as the Compeer Financial representative at the 2025 Fall Career Fair, organized and handled student submitted resumes.