Hozair Ibrahimkhail

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EDUCATION

Hunter College – CUNY **New York**

Bachelors in Computer Science with Minor in Math

- Data Structures and Algorithms, Dynamic Programming, Operating Systems, Computer Architecture, Software Engineering, Data Science, Machine Learning, Database Management, Computer Vision

Skills:

- Python, C++, Git, Github, FullStack, CSS, React, FastAPI, AI, JavaScript, Bash, Numpy, Pandas, MatPlotLib, TailwindCSS, Docker, Scikit-Learn, Logistic Regression, SQL, Spark, PyTorch, RFE, Data Visualization (Heatmaps, Plots), AWS, Java
- Languages: Farsi (Fluent), Spanish (Intermediate)

PROJECT EXPERIENCE

Language Coach AI

LangAI_Github

- Designed and developed an AI-powered language learning app that facilitates real-time conversations in the user's target language, adapting content by topic and proficiency to simulate natural linguistic immersion.
- Integrated OpenAI's GPT-4 to generate dynamic, level-appropriate prompts and dialogue, and incorporated LanguageTool API to provide immediate grammar, syntax, and vocabulary corrections for great feedback.
- Implemented speech-to-text and text-to-speech features using Whisper API and gTTS, creating a voice-driven learning environment that mimics real-world conversations present in Spanish geographical areas.
- Leveraged Hugging Face NLP models to track and analyze 100+ vocabulary words per user, identifying patterns in learner usage and surfacing personalized word lists and error trends.

Receipt Expense Tracker

Rceipt_Track_Github

- Architected a full-stack expense management application (FastAPI, PostgreSQL, React.js) to provide users with a comprehensive financial dashboard for tracking finances empowering users with granular control over their finances.
- Engineered an intelligent receipt processing pipeline integrating OCR (Tesseract) and NLP to automatically extract and parse itemized data from uploaded receipt images, reducing manual data entry by over 90%.
- Implemented secure user authentication using JWT tokens and designed RESTful APIs to support receipt upload, expense retrieval, and manual entry, ensuring data security and authorization.
- Designed a receipt categorization system using rule-based and ML-driven classifiers to auto-tag expenses by category

Git Clone

GitClone_Github

- Engineered a simplified, custom-built version control system inspired by Git, enabling users to initialize repositories, stage files, commit snapshots, and view commit history via a command-line interface.
- Implemented core Git functionality from scratch using Python, including content-addressable storage, tree structures, file diffs, and SHA-1 hashing for object tracking, in order to better understand Git fundamentals.
- Built modular CLI commands such as init, add, commit, status, and log using Python's Typer library and custom file system traversal logic, integrated into root directory.

Diabetes Prediction Machine

Diabetes_Predictor

- Designed and deployed a robust predictive machine learning model for proactive diabetes risk stratification, leveraging comprehensive patient health data to furnish healthcare professionals with a data-driven tool for prioritizing targeted intervention strategies and optimizing long-term patient health outcomes.
- Executed a multi-stage, rigorous feature engineering process utilizing F-tests, Recursive Feature Elimination (RFE), and Random Forest feature importances to precisely assess variable significance, ultimately enhancing model parsimony and predictive power by systematically excluding low-impact features (e.g., SkinThickness).
- Tuned model hyperparameters using GridSearchCV, applied L2 regularization in logistic regression, and evaluated performance using accuracy_score, precision, and recall metrics.