Muhammad Shabbar

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Education

- **NUCES FAST** Bachelors in Computer Science(7th Semester)

Projects

Virtual Classroom **Integration: Django, SQL Database,HTML, CSS**

- Developed a Virtual Classroom inspired by Google Classroom using Django, HTML, CSS, and an SQL database. Enhanced online learning by incorporating features such as assignment submissions, grade tracking, and real-time notifications. Evaluated positively by the faculty for its comprehensive functionality and user-friendly design.

Socket Programming with Gmail Authentication **Integration: Gmail API, Socket Programming**

- Created a Socket Programming project for a Computer Networks course, integrating Gmail API for secure communication. Utilized Python to establish client-server interactions, ensuring robust data exchange and security through Gmail's authentication protocols. Recognized by faculty for demonstrating practical application of network communication principles.

Python Automation **Integration: Azure OpenAI API, PEXEL API, Moviepy, Streamlit**

- Developed an innovative YouTube content creation tool using Azure OpenAI to generate scripts, thumbnails, and videos, leveraging GPT-3.5 for text generation and DALL-E 3 for image creation.
- Implemented automated video creation using Pexels API for image fetching and MoviePy for video editing, enhancing the efficiency and creativity of YouTube content production.

University Management Portal **Integration: PHP, SQL database**

- Designed and developed a comprehensive University Management Portal using PHP and SQL database, featuring separate panels for students, teachers, and administrators.
- Implemented functionalities for student enrollment, course management, grading system, and administrative tools to streamline university operations and enhance user experience.

Self Driving Car in a Simulated Environment **Integration: PyQt5t, Machine learning algorithms**

- Developed an AI-based self-driving car simulation environment using PyQt5, incorporating multiple pathfinding algorithms (BFS, DFS, A, CSP) for goal-oriented navigation in dynamically generated grids.*
- Implemented advanced multi-agent strategies and heuristics, including utility functions and alpha-beta pruning in A and CSP algorithms, to enhance decision-making and optimize search complexity in a simulated environment with obstacles and rewards.

FYP IDEA:

BLINK - Brief Learning and Intelligent Note Keeping:

Develop a student learning system that automates document uploads (PDFs, Word, PPT, etc.), extracts key data, and generates AI-driven notes. It provides personalized study material, RAG Chatbot, comparative analysis, and quizzes with feedback to enhance learning efficiency and help students make informed decisions on their academic progress.

Certifications

- **MLOps Deployment and Life Cycling** DataCamp (Sep 2024)
- **Introduction to Deep Learning with PyTorch** DataCamp (Aug 2024)
- **Natural Language Processing in Python** DataCamp (Aug 2024)
- **Machine Learning Pipeline using Python and scikit-learn** Codecademy (Mar 2024)

Skills

- PyTorch
- Scikit-learn
- TensorFlow
- Neural Networks, Backpropagation
- NLP: spaCy, NLTK, Text Classification, NER
- Regression, Classification, Clustering, PCA
- Hyperparameter Tuning, Cross-Validation
- Azure OpenAI API
- Jupyter Notebooks
- Django
- OpenCV (Basic)
- Database Management
- API Integration