Syed Moonis Haider

Phone: +92 314 5579215 | E-mail: moonishaider12@gmail.com

EDUCATION

FAST NUCES (NATIONAL UNIVERSITY OF COMPUTER AND EMERGING SCIENCES) **August 2020 - December 2024**

Major: BS Computer Science (4th Year)

Relevant Courses:

Artificial Intelligence (AI), Generative Artificial Intelligence (Gen AI), Data Structures (DS), Design and Analysis of Algorithms (DAA), Probability and Statistics

PROJECTS

Housing Price Prediction Using Machine Learning

- Developed a machine learning model to predict housing prices based on various features such as location, square footage, number of bedrooms/bathrooms, and amenities.
- Implemented **regression** algorithms including Linear Regression, Decision Trees, and Random Forests using Python and **scikit-learn** library.
- Utilized feature engineering techniques to preprocess and select relevant features, improving model accuracy and robustness.
- Achieved high accuracy in housing price prediction, with a Mean Absolute Error (MAE) of less than **5%** on a test dataset, demonstrating the precision of the solution.
- Addressed the challenge of predicting real estate prices by incorporating historical sales data, demographic information, and housing market trends.
- Provided valuable insights to home buyers, sellers, and real estate agents, aiding in informed decision-making and market analysis.

Signature Recognition using Convolutional Neural Networks (CNN)

- Developed a machine learning model to recognize handwritten signatures using Convolutional Neural Networks (CNN).
- Processed and segmented signature images into distinct folders based on individuals for organized classification.
- Implemented CNN using Python and TensorFlow to automatically extract features from signature images.
- Compared CNN-based feature extraction with traditional manual techniques, such as Histogram of Oriented Gradients (HOG) and Scale-Invariant Feature Transform (SIFT), demonstrating the superiority of deep learning approaches.
- Achieved **80% accuracy** in signature recognition, evaluated using precision, recall, F-measure, and overall accuracy metrics.
- Demonstrated the effectiveness of CNN in handling variations in handwriting, contributing to advancements in authentication systems.

Word Completion using Long Short-Term Memory (LSTM)

- Built a word-level Long Short-Term Memory (LSTM) model to predict the next word in a sentence, trained on Shakespeare's plays.
- Developed a real-time word completion system with a user-friendly interface that dynamically suggests the next word based on partial user input.
- Implemented the LSTM model using Python and TensorFlow, leveraging the network's ability to handle sequential data and learn long-term dependencies.
- Explored the impact of different hyperparameter settings, improving model coherence and fluency in sentence completion.
- Evaluated the LSTM model's performance in providing accurate and contextually relevant word predictions, demonstrating the potential of LSTM in natural language processing applications such as predictive text and autocompletion.

Aircraft Route Optimization with Genetic Algorithm

- Developed an Aircraft Route Optimization system using **Genetic Algorithms** (GAs).
- Utilized Python programming language for algorithm design and implementation.
- Employed data visualization tools to create a user-friendly interface for displaying optimized routes and key performance metrics.
- Demonstrated expertise in algorithm design, optimization techniques, and simulation methods.
- Showcased strong problem-solving skills in addressing real-world challenges in aviation route planning.
- Integrated real-time weather data to optimize flight routes for a fleet of commercial aircraft.

WORK EXPERIENCE

Teacher Assistant (TA) of Artificial Intelligence – Fast Nuces **February 2024 – June 2024**

- Assisted in creating and grading assignments, quizzes, and projects, providing feedback to enhance students' understanding of AI concepts.
- Conducted tutorials and addressed student queries, supporting their learning in topics like machine learning, neural networks, and natural language processing.

Final Year Project – Fast Nuces **February 2024 – December 2024**

- Developed an OCR model to automatically extract and recognize text from vehicle license plates, using computer vision and machine learning techniques.
- Built a conversational AI chatbot using Botpress, designed to interact with users and handle queries, showcasing expertise in natural language processing and chatbot development.

SKILLS

- Python- AI/ML/GenAi
- Natural Language Processing (NLP)
- Data Visualization
- Web Scraping
- Version Control (git)