Ahmed Mohamed Sallam *Machine Learning Engineer*

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EDUCATION

Bachelor of Computer Science Sep 2020 – May 2024 | Cairo, Egypt
Cairo University - Faculty of Computers and Artificial Intelligence

PROFESSIONAL EXPERIENCE

ITSM System Engineer - WOREX TECHNOLOGY Sep 2024 – present | Cairo, Egypt
- Managed and optimized ITSM processes using Ivanti Neurons, aligning with ITIL best practices to enhance service delivery and incident management.
- Administered and maintained SQL Server databases to support ITSM workflows, ensuring data integrity and efficient query performance.
- Implemented Agile methodologies to streamline ITSM project delivery and foster cross-functional collaboration.
- Oversaw system administration for Windows and Linux servers, including Bash scripting for automation and troubleshooting, contributing to digital transformation initiatives.

Competitive Programmer - Orange Digital Center Egypt Sep 2022 – Oct 2022 | Cairo, Egypt
- Experienced Competitive Programming Trainee proficient in algorithmic problem-solving and data structures.
- Mastered advanced techniques such as prefix sums, binary search optimizations, and efficient STL usage (vectors, stacks, queues, maps, etc.).
- Strong skills in number theory, bitwise operations, recursion, and dynamic programming.
- Proficient in graph traversal algorithms, including Depth First Search (DFS) and Breadth First Search (BFS).
- Adept at efficiently solving complex algorithmic challenges and optimizing solutions for performance

PROJECTS

Al-Maqraa Sep 2023 – May 2024
• Designed and implemented advanced speech recognition models, including QuartzNet and RNN-CTC, to evaluate Quranic recitations, ensuring precise pronunciation feedback for users.
• Engineered and trained a deep learning model to convert Arabic speech into text with accurate diacritics, enhancing the accuracy of Quranic recitation transcription and providing users with detailed phonetic guidance.
• Developed a comprehensive audio preprocessing pipeline involving silence removal, echo noise reduction, and signal pre-emphasis, enhancing the quality of audio inputs for more accurate model predictions.
• Implemented rigorous evaluation techniques, including cross-validation and hyperparameter tuning, to refine model performance, achieving higher accuracy in the detection and correction of recitation errors.
• Deployed ML models and backend services using Microsoft .NET Framework and PostgreSQL on Azure, ensuring scalability, robustness, and secure access to Quranic learning resources globally.

Text Classification using RNN and Word Embeddings
Sentiment classification
- Developed a sentiment analysis system using RNN and LSTM models, achieving up to 89% accuracy in validation of Amazon reviews.
- Implemented data preprocessing, tokenization, and a GUI application for real-time sentiment prediction.
- Optimized models using the Adam optimizer and cross-entropy loss, visualizing training and validation trends for performance evaluation.

Spam Email Detection
- Developed a spam email classifier using Logistic Regression and Random Forest models with various text preprocessing techniques and embeddings like Count Vectorizer, TF-IDF, Word2Vec, and BERT.
- Assessed models based on accuracy, precision, recall, and F1 score, optimizing hyperparameters for each approach.
- Achieved high accuracy and precision across models, with the BERT-based Logistic Regression model reaching 98.71% accuracy and high F1 scores.

Connect 4
- Created a Connect Four game using Python and Pygame, featuring an interactive graphical user interface and smooth gameplay mechanics.
- Designed and integrated an AI opponent using the Minimax algorithm with alpha-beta pruning, enhancing decision-making and gameplay challenge.
- Utilized Matplotlib to compare AI strategies, focusing on execution time and nodes explored, providing insights into algorithm efficiency and effectiveness.

Investigating Netflix Movies and Guest Stars in The Office
- Conducted an exploratory data analysis of Netflix's movie dataset using Python, leveraging pandas for data manipulation and matplotlib for creating insightful visualizations to identify trends in movie durations over time.
- Filtered and subsetted large datasets to extract relevant information, such as specific movie genres and durations, improving the efficiency and focus of analysis.
- Implemented customized scatter plots with color differentiation to analyze the impact of non-typical genres on overall movie duration trends, enhancing the clarity and interpretability of the data presented.

Skills
Concepts: Algorithm, OOP, SOLID Principles, Design Patterns, High Performance Computing, Version Control, Containerize, Virtualization
Programming Languages: C/C++, Java, Python, HTML, CSS
Database: PostgreSQL, MySQL, Microsoft SQL Server
Web Framework: Flask , Spring Boot
ML Frameworks & Libraries: NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn, PyTorch, TensorFlow, NLTK, SpaCy, Gensim
Tools: Git, GitHub, Docker, MPI, OpenMP
Soft Skills: Teamwork, Leadership, Time management