

Leen Kharboutli

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Skills

Software Tools: Jupyter Notebook, Git, Docker, NumPy, pandas, scikit-learn, Matplotlib, SciPy, Tableau

Programming Languages: Python, Bash, SQL

Work Experience

Solutions Engineer, Intelligent Artifacts – New York, NY June 2021 – April 2024

- Led development for a year-long Air Force SBIR Phase II contract to modernize the Mission Data File (MDF) build process for the F-35 Lightning II
- Built a solution in Python to enhance sensor fusion and enable automatic updating, which resulted in a 75% reduction in MDF build time, with the final prototype achieving 96.39% classification accuracy
- Developed and presented 10+ technical demonstrations to key stakeholders, featuring novel solutions across multiple domains such as computer vision, autonomous planning, NLP, and sensor fusion
- Conducted research and development initiatives to implement innovative prototypes for the GAIuS symbolic AI framework resulting in improved capabilities in areas such as computer vision
- Built computer vision feature extraction pipelines in Python with OpenCV and scikit-image, and integrated these pipelines into an image recognition system resulting in over 97% accuracy
- Developed a modular Actions System integrated into a cybersecurity prototype for automated network anomaly response, eliminating the need for manual ticketing
- Authored comprehensive user-facing technical documentation to facilitate the integration of solutions into operational workflows and environments

Learning Assistant, Rutgers Learning Centers – New Brunswick, NJ Sept 2018 – Dec 2020

- Guided approximately 200 students through both the Calculus I and Introduction to Mathematical Reasoning course curriculums over 5 semesters
- Analyzed and identified student academic needs and communicated findings with professors to plan for upcoming weeks, contributing to an optimized learning environment
- Completed a comprehensive pedagogy course and engaged in ongoing professional development to enhance teaching and mentoring skills in line with best practices

Projects

Song Lyrics Emotion Analysis github.com/LeenKharboutli/lyric-emotion-analysis

- Developed an emotion classification system using the DistilBERT NLP model, and fine-tuned it on a text dataset with emotion labels to classify emotion on an unlabeled lyrics dataset
- Implemented data preprocessing with the Hugging Face Transformers library, trained the model with TensorFlow and Keras, and used scikit-learn for label preprocessing, resulting in 93.6% accuracy
- Conducted exploratory data analysis on the song lyrics dataset with predicted emotion labels, examining emotional content trends over time, and implemented an interactive Tableau dashboard

Education

Rutgers University–New Brunswick – Bachelor of Arts in Mathematics

January 2021