Reem Alessa

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ReemAlessa

EDUCATION

Sep 2019 – Jun 2023 **Bachelor of Science in Computer Science**
King Saud University (KSU)
GPA: *4.93/5.00*
Selected Coursework: *Artificial Intelligence, Machine Learning, Digital Image Processing and Analysis, Data Mining, Internet Technologies, Probability & Statistics, Operating Systems, Design and Analysis of Algorithms, Software Engineering, Linear Algebra.*

EXPERIENCE

Sep 2023 – Present **AI Developer**
Natural Language Processing (NLP), TAHAKOM
- Developed Arabic and multilingual NLP and speech models, including machine translation and Arabic speech synthesis systems, improving performance and language coverage.
- Curated datasets for ML and NLP tasks for robust model training.
- Managed High-Performance Computing (HPC) resources for large-scale training, reducing runtime and improving efficiency.
- Evaluated model performance and implemented improvements, increasing accuracy and stability.

Jun 2022 – Aug 2022 **Computer Vision Research Intern**
CCS Joint Center Between KACST and MIT
- Assisted in solar panel detection from satellite imagery by conducting a preliminary literature review, labeling the data using image segmentation tools to create masks for satellite images, and building a machine learning model for image segmentation. **Supervisor: Prof. Abdulelah Habib.**

PROJECTS

Arabic Text-to-Speech (TTS)
- Collected, cleaned, and processed 90 hours of spoken Saudi dialect audio data to support model development and evaluation.
- Developed an Arabic text-to-speech pipeline to produce natural, human-like speech with accurate pronunciation, rhythm, and prosody.

Multilingual Machine Translation Project
- Collected, cleaned, and processed 324M bilingual sentence pairs from open-source datasets.
- Pre-trained and fine-tuned a large language model for multilingual translation generation, which led to improved coverage for low-resource language pairs.

Arabic Paraphrase Detection
Research Project. **Adviser: Prof. Hafida Benhidour**
- Built deep learning models for detecting Arabic paraphrasing using transformer-based architectures, which led to accuracy gains over baseline methods.

- Built an Arabic paraphrase generation model using a transformer-based architecture, which produced high-quality paraphrases
- Constructed a labeled Arabic paraphrase dataset that consists of Arabic sentences, along with their corresponding generated paraphrases.

SKILLS

Languages: Python, C, Java, SQL, HTML

Libraries: PyTorch, TensorFlow, Pandas, SciPy, NLTK, Matplotlib, NumPy

Domains: Machine Learning, Deep Learning, Natural Language Processing, Computer Vision

Tools: Git, CUDA, LaTeX

HONORS & AWARDS

2025 **Scholarship in the Future Technology Leaders Program**
Tahakom

2012 **Student Scholarship in The National Program for Gifted Identification (Mawhiba)**
Ministry of Education