Abdullah Adnan Alali

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SUMMARY

- Ph.D. Data Scientist skilled in developing cutting-edge machine learning models to solve technical challenges.
- Proven ability to develop and implement complex AI/ML models, including CNNs, temporal networks, and Large Language Models (LLMs), for challenging data analysis problems.
- Actively seeking a Data Science role leveraging deep learning expertise, with a strong interest in Generative AI applications.

EXPERIENCE

CNTXT, KSA 08/2024 – Present

Data Scientist

- Lead the development of AI capabilities, focusing on Generative AI, for CNTXT's InSafe product.
- Architected and implemented advanced Retrieval-Augmented Generation (RAG) techniques leveraging external knowledge bases; developed robust evaluation frameworks to assess contextual relevancy and mitigate hallucination.
- Developed and deployed AI agents utilizing frameworks such as Langchain, Llamaindex, CrewAI, Letta, and n8n automation workflows.

SLB, KSA 06/2023- 08/2023

Research Engineer (Intern)

- Developed a machine learning model (CNN) to enhance dielectric and resistivity inversion logs obtained from a resistivity propagation tool, improving data interpretability under extreme conditions.

Saudi Aramco, KSA 06/2021- 08/2021

Machine Learning Engineer (Intern)

- Developed machine learning models (causal CNN) to obtain rock properties from field seismic data using limited wells as labels, enabling faster analysis.

King Abdullah University of Science and Technology (KAUST), KSA Fall 2020 & Fall 2022

Teaching Assistant (Earth Science & Engineering)

- Enhanced student understanding of complex graduate-level geophysics (FWI, Seismic Imaging) by clarifying advanced concepts and leading hands-on tutorials on practical implementation techniques.

EDUCATION

King Abdullah University of Science and Technology (KAUST)

Ph.D. Earth Science & Engineering (Machine Learning Track) 2023

Dissertation title: *Advances of deep learning in geophysical challenges: 4D seismic processing and salt inversion.*
Advisor: Tariq Alkhalifah.

M.S. Earth Science & Engineering 2018

Thesis title: *Seismic Imaging and Velocity Analysis Using a Pseudo Inverse to the Extended Born Approximation*.
Advisor: Tariq Alkhalifah.

King Fahd University of Petroleum and Mineral (KFUPM)

B.S. Geophysics 2016

PROJECTS

- **AI Agent for Industrial Safety Workflow Automation** 2025
  Developed an AI agent integrated into the InSafe platform to automate key industrial safety workflows, such as work permit processes and hazard analysis and identification.
- **Multi-Agent Customer Support System** 2025
  Designed and developed a collaborative multi-agent system (including technical expert and quality assurance agents) to streamline and enhance customer support processes.
- **Subsurface Image Reconstruction** 2022
  Engineered and integrated deep learning models (CNNs) with physics-based inversion techniques to enhance the reconstruction of complex subsurface images from seismic data.
- **Carbon Storage Monitoring** 2020
  Applied temporal machine learning models to process 4D seismic data to monitor carbon storage in the subsurface.

PUBLICATIONS AND PARTICIPATIONS

- **KAUST-Nvidia Workshop:** Gained hands-on experience in deep learning, multi-GPU computing, and model parallelism for scientific applications (2019, 2020, 2022).
- **International Conferences:** Presented research findings at major international conferences including SEG, EAGE, and MEOS-GEO (2018-2022).
- **SEG Machine Learning Workshop:** Delivered oral presentation on ML applications in geoscience (Oman, 2020 & 2021).
- Authored/Co-authored six peer-reviewed journal articles applying advanced machine learning techniques to solve complex geophysical problems (Detailed list available upon request).

CERTIFICATES & AWARDS

- **Certificate: Generative AI with Large Language Models** (Coursera). 2024
- **Best Ph.D. Thesis Award**, Earth Science Department, KAUST. 2023
- **Winner, Explainable AI Hackathon**, 83rd EAGE Annual Conference. 2022
- **Dean's Award for Outstanding Students**, Earth Science Program, KAUST. 2022
- **Certificate: Fundamentals of Deep Learning for Multi-GPUs** (NVIDIA). 2021
- **1st Place, KAUST GPU Hackathon** (Accelerating Scientific Applications). 2020
- **Certificate: Fundamentals of Deep Learning for Computer Vision** (NVIDIA). 2019

VOLUNTEER EXPERIENCE

Artificial Intelligence Mentor 2021

- Led a team in the DGS *Industry Emerging Challenges Mentorship program* to solve an image segmentation problem in geoscience using deep learning.

Machine Learning Teaching Assistant 2021

- Assisted in hands-on tutorials on word embedding, active learning, and transformers as part of *KAUST-Iraya unstructured data in geoscience summer school*.

PROGRAMMING

- **Programming Languages:** Python, C/C++.
- **Machine Learning**: Tensorflow, Keras, PyTorch.
- **Generative AI Frameworks:** Langchain, CrewAI, Llamaindex, Letta.
- **Parallel & High-Performance Computing:** OpenMP, MPI, Slurm.