Abdullah Adnan Alali

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SUMMARY

- Passionate Ph.D. holder specializing in Artificial Intelligence (AI) within the field of Geophysics.
- Experienced in conducting research and collaborating with interdisciplinary teams.
- Strong soft skills fostered through active participation in international conferences and workshops.

EXPERIENCE

SLB, KSA

Research Engineer (Internship) *2023*

Developed machine learning model to enhance dielectric and resistivity inversion logs obtained from resistivity propagation tool in extreme conditions.

Saudi Aramco, KSA

Machine Learning Engineer (Internship) *2021*

Developed machine learning models to obtain rock properties, namely acoustic impedance, Vp/Vs and density for field seismic data, using a few wells as labels.

King Abdullah University of Science and Technology (KAUST), KSA

Full-waveform Inversion (FWI) Teaching Assistant (TA) *2022*

Prepared assignments and provided hands-on tutorials on practical aspects of implementing FWI.

Seismic Imaging Teaching Assistant (TA) *2020*

Assisted students to better understand the material along with grading their assignments and exams.

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.
Relevant Courses: Seismic Inversion, Computational Geophysics, Machine learning.

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.
Relevant Courses: Seismology, Seismic Imaging, Inverse Problem, Data analysis in geoscience.

King Fahd University of Petroleum and Mineral (KFUPM)

B.S. Geophysics *2016*

Relevant Courses: Seismic Exploration I, Seismic Exploration II, Seismic Processing, Potential Field Methods.

Colorado School of Mines

International Exchange Program *2014*

Relevant Courses: Sedimentology and Stratigraphy, Well Logging.

PROJECTS

- **Uncertainty Quantification** *2023*
  Applied a variational inference method to assess uncertainties for full-waveform inversion.
- **Salt Body Reconstruction** *2022*
  Integrated convolutional neural network into full-waveform inversion to reconstruct salt body images.
- **Carbon Storage Monitoring** *2020*
  Applied recurrent neural network to process time series data and enhance carbon signal in the subsurface.

PARTICIPATIONS

International Conferences *2018,2022*

- Presented at various international conferences including SEG, EAGE, and MEOS-GEO conferences.

SEG Machine Learning Workshop For Geoscience, Oman *2020,2021*

- Presented an oral presentation and attended presentations of machine learning applications in geoscience.

KAUST-Nvidia Workshop On Accelerating Scientific Application Using GPU *2019,2020,2022*

- Hands-on in deep learning, multi-GPU, and model parallelism workshops.

CERTIFICATES & AWARDS

- Recognition for the best Ph.D. thesis in the earth science department at KAUST. *2023*
- The winner award in the 83rd EAGE annual meeting explainable artificial intelligence hackathon. *2022*
- The dean's award for outstanding students in the Earth science program at KAUST. *2022*
- Certificate in "Fundamentals of deep learning for multi-GPUs" from NVIDIA. *2021*
- The 1st place award in the KAUST GPU hackathon for accelerating scientific application. *2020*
- The winner award for a reading competition about machine learning in geoscience organized by DGS. *2020*
- Certificate in "Fundamentals of deep learning for computer vision" from NVIDIA. *2019*
- The 1st place in the SEG/DGS challenge bowl in the Middle East and 2nd place in the final round held in the SEG annual meeting in Anaheim, California. *2018*

VOLUNTEER EXPERIENCE

Workshop Assistant *2022*

- Assisted in the "Entrepreneurs in Greens" workshop at the *Inaugural Annual Saudi Youth Sustainability Conference.*

Artificial Intelligent Mentor *2021*

- Led a team in the *Industry Emerging Challenges Mentorship program* organized by DGS to solve a geoscience challenge using artificial intelligent tools.

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

- **Languages:** C/C++, Python.
- **Parallel programming:** OpenMP, MPI, Slurm, and worked on **Shaheen 2.0 (KAUST supercomputer)**
- **Machine learning**: Tensorflow and Pytorch
- **Distributed learning:** Horovod and DeepSpeed