

Joint Research Center of Artificial Intelligence



SDAIA-KFUPM Joint Research Center for Artificial Intelligence (JRC-AI) was recently established at KFUPM to advance the research in the field of Artificial Intelligence (AI). The center aims to establish the Kingdom as a global leader among the league of data-driven economies by conducting and supporting research and innovation in AI, developing use-cases and solutions in accordance with the Saudi National Strategy of Data & AI to achieve the Kingdom's Vision 2030.



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Dr. Motaz Alfarraj
JRC- AI Director, JRC-AI



Biography

Dr. Motaz Alfarraj is the Acting Director of JRC-AI at and Assistant Professor in the Electrical Engineering Department at KFUPM. His research interests include Machine Learning, Deep Learning, Computer Vision, and Image Processing. His research focuses on the integration of Physics in data-driven systems to enable effective learning from noisy or data for applications in oil and gas exploration and production.. He is a member of Society of Exploration Geophysicists (SEG), and Society of Petroleum Engineers (SPE).

Education:

- (2019) Ph.D. in Electrical and Computer Engineering with a minor in Math, Georgia Institute of Technology, Atlanta, GA, USA.
- (2015) M.Sc. in Electrical and Computer Engineering with a minor in Math, Georgia Institute of Technology, Atlanta, GA, USA.
- (2013) Bachelor of Electrical Engineering with First Class Honors, KFUPM.

Experience:

- (2021-Present) Acting Director of SDAIA-KFUPM Joint Research Center for Artificial Intelligence (JRC-AI), KFUPM.
- (2020-Present) Chairman of the Executive Committee of the Center for Energy and Geo Processing (CeGP), KFUPM.
- (2020-Present) Chair of Saudi Arabia IEEE Signal Processing Society Chapter.

The center focuses on various topics in the field of AI including Machine Learning, Deep Learning, Computer Vision, Reinforcement Learning, Knowledge Representation, Learning Theory, Natural Language Processing, and Bioinformatics. In addition, the center mainly focuses on applications of AI in two fields: Oil and Gas, and Energy and Utility.

The applications of oil and gas field include the oil and gas exploration and production pipeline such as seismic acquisition and processing, data compression and enhancement, seismic interpretation and inversion, reservoir characterization, real-time drilling, fault detection and risk assessment, production optimization, modeling and simulation, and site security and safety monitoring. On the other hand, the applications of the energy and utility cover energy generation, monitoring, scheduling, forecasting, efficiency, and control for conventional, renewable, and hybrid power systems.

The center's research activity aims to develop the projects it undertakes into Proof-of-Concept (POC) and Minimum-Viable-Product (MVP), in addition to establishing a presence in global academic venues in the fields of its expertise. Also, the center aims to attract, support, and train talents in the Kingdom in the field of AI by developing and conducting training programs for young talents, academic faculties, and executives.

