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Computational seismic interpretation (CSI)

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In this talk, I will share our recent work of using advanced signal and image processing theories and machine learning to semi-automate the seismic interpretation process. We will show that relying primarily on the understanding of the human vision system and its cognitive capabilities to device algorithms that mimic a human interpreter'swork flow results in a semi-automated interpretation that not only saves time but also improves the overall work flow. The talk will present various algorithms that aim at detecting and tracking faults and salt dome bodies from real seismic data sets. The talk will also show case an application of retrieval and classification of seismic structures that are solely based on machine learning and the modeling of the human vision system. The goal of this talk is to share with the community our objective of bringing the seismic interpretation to the information age we live in nowadays and create more robust algorithms that build on decades of knowledge in both geophysics and computational neuroscience.

Biography:

Prof. AlRegib is currently a professor in the School of Electrical and Computer Engineering at the Georgia Institute of Technology. He is the Director of the Multimedia and Sensors Lab (MSL) at Georgia Tech. In 2012, he was named the Director of Georgia Tech's Center for Energy and Geo Processing (Ce GP). He is a faculty member of the Center for Signal and Information Processing (CSIP). He also serves as the Director of Georgia Tech's Initiatives and Programs in MENA. He has authored and co-authored more than 170 articles in international journals and conference proceedings. He has been issued five U.S. patents, two US patent applications, and several invention disclosures. He is a Senior Member of IEEE. Prof. AlRegib is very active in the IEEE and has chaired several conferences and editorial positions. Prof. AlRegib received several awards and has provided services and consultation to several companies and international educational and R&D organizations.

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