

Summary

Experience: Total 9 years of work experience with 6 years in data science

Career highlights:

- Worked as a field engineer in various countries in the O&G industry
- Completed MSc. in Statistics and Ph.D. in Engineering from UT Austin
- Currently working as the lead data-scientist for the drilling team at Pioneer Natural Resources

Skills: Python, SQL, java-script, node.js, statistics, and machine learning

Education

The University of Texas at Austin, Austin, Texas

Doctor of Philosophy in Petroleum and Geosystems Engineering, May 2021 CGPA: 3.80

Master of Science in Statistics, December 2020 CGPA: 3.96

Graduate Research Assistant and Lab Manager

- Research: "Automated Surface Measurements of non-Newtonian Fluid Properties with Machine Learning Models".

Middle East Technical University (METU), Ankara, Turkey

Master of Science in Petroleum and Natural Gas Engineering, February 2017

Bachelor's of Science in Petroleum and Natural Gas Engineering, May 2014

Minor in Rock Mechanics - Mining Engineering

Work Experience

Pioneer Natural Resources, Irving, Texas

Senior Engineer/Data Scientist - Drilling Optimization Team

Sep 2022 - Present

Leading a team of 4 data scientists dedicated to optimization and modeling for drilling operations.

Current projects include:

- Automated rig state detection
- Digital parameter roadmap
- Digital drilling program
- Tripping decision model

Engineer/Data Scientist - Drilling Optimization Team

Jun 2021 - Sep 2022

Developed real-time physics and data-based models, algorithms and predictive alerting systems for

- Hydraulics (ECD, EMW and transient cuttings models)
- Automated torque and drag model
- Stuck-pipe prevention
- Washout elimination
- Clean-up cycle optimization
- BHA optimization
- Drilling parameter optimization
- Anti-collision

Pioneer Natural Resources, Irving, Texas

Engineering Intern

May 2019 - Aug 2019 / May 2020 - Aug 2020

R5 Automation, Austin, Texas

Data Scientist Intern

Jun 2018 - Aug 2018

Work Experience

BM Holding - Pars Anatolian Drilling Solutions, Aydin-Denizli, Turkey & Djibouti, East Africa

Rig Manager / Project Engineer / Drilling Engineer

Aug 2015 - Jan 2016 / July 2016 - July 2017

- Prepared casing, cementing, mud, wellhead, bit designs and cost estimations for various geothermal wells in Turkey and Djibouti. Supervised drilling, drilling fluids, well completion and well testing operations on the rig site. Finalized drilling and well-completion projects within the required timelines and budget constraints.

PENA Trade, Ankara, Turkey

Sales Manager / Technical Consultant

Jan 2016 - June 2016

- Managed general sales, marketing, and business development activities in oil and gas, geotechnical and mining departments. Represented well-known companies in Turkey (i.e., Betek, Junttan, Mincon, Mitsubishi Materials, Nordic Lights, and Victaulic). Directly reported to the CEO and improved sales profits by 30% in 6 months by optimized stock management and active marketing.
- Developed machine-learning based forecasting tools for inventory and sales management.

Turkish Petroleum Oilfield Services Co. Afghanistan, Iraq, Mediterranean Sea and Black Sea

Drilling Engineer

Jul 2014 - Jul 2015

- Supervised drilling, drilling fluids, well completion and well testing operations on the rig site for onshore and offshore wells. Finalized drilling and well-completion projects within the required timelines and budget constraints.

Organizations & Achievements

Society of Petroleum Engineering 2010 - present

Various positions within METU Student Chapter, Turkey Section and UT Student Chapter (young professionals chairperson, petrobowl team captain and chapter president, program chairman)

2018: Petrobowl 3rd Place Award

2015: SPE Young Professional Activity Section Award

Student Paper Contest Awards

2019: SPWLA International - First Place - Ph.D. Division

2016: SPE Turkey Section - First Place - Graduate Division

2013: SPE Turkey Section - First Place - Undergraduate Division

Hackathons

2021: Energy A.I. Hackathon 2021 - First Place

2021: Geothermal Datathon GTX 2021 - Third Place

Other Leadership Experience

2021: GAIN 2021 - Co-Director

Publications

- Gul, S.**, El-Zein, M., Aldin, H., Aldin, M., Mullin, C., van Oort, E. 2022. Automated Mud Check with an AI-Enhanced Automated Mud Skid: Results of a Long-Term Permian Field Trial *IADC/SPE International Drilling Conference and Exhibition*
- Gul, S.** 2021. Machine Learning Applications in Drilling Fluid Engineering: A Review. *Proceedings of the ASME 2021 40th International Conference on Ocean, Offshore and Arctic Engineering*.
- Gul, S.**, van Oort, E. 2021. Automated real-time solids content and salinity analysis of well construction fluids using in-line XRF measurements. *Journal of Natural Gas Science and Engineering*. <https://doi.org/10.1016/j.jngse.2021.104042>.
- Gul, S.**, Shiriyev, J., Singhal, V., Erge, O., Temizel, C. 2021. Advanced materials and sensors in well logging, drilling, and completion operations. *Sustainable Materials for Oil and Gas Applications* edited by Temizel et al., Gulf Professional Publishing, 2021, 93-123.
- Gul, S.**, Karimi, A., van Oort, E., Leulseged, A., Cayeux, E. 2020. Automated Solids Content Determination in Drilling and Completions Fluids. *SPE Annual Technical Conference and Exhibition 2020*. SPE-201368-MS. <https://doi.org/10.2118/201368-MS>.
- Gul, S.**, van Oort, E., Mullin, C., Ladendorf, D. 2020. Automated Surface Measurements of Drilling Fluid Properties: Field Application in The Permian Basin. *SPE Drilling & Completions*. 35 (2020): 525–534. <https://doi.org/10.2118/201094-PA>.
- Gul, S.**, Erge, O., and van Oort, E. 2020. A Helical Pipe Viscometer System for Automated Rheology Measurements. *IADC/SPE International Drilling Conference and Exhibition*. SPE-199572-MS. <https://doi.org/10.2118/199572-MS>.
- Gul, S.**, Erge, O., and van Oort, E. 2020. Frictional Pressure Losses of Non-Newtonian Fluids in Helical Pipes: Applications for Automated Rheology Measurements. *Journal of Natural Gas Science and Engineering*, 73. <http://doi.org/10.1016/j.jngse.2019.103042>.
- Gul, S.** and van Oort, E. 2019. A Machine Learning Approach to Filtrate Loss Determination and Test Automation for Drilling and Completion Fluids. *Journal of Petroleum Science and Engineering*. <http://doi.org/10.1016/j.petrol.2019.106727>.
- Gul, S.**, van Oort, E., Mullin, C., Ladendorf, D. 2019. Automated Surface Measurements of Drilling Fluid Properties: Field Application in The Permian Basin. *URTEC 2019*. URTEC-2019-964-MS. <http://doi.org/10.15530/urtec-2019-964>.
- Gul, S.**, Johnson, M.D., Karimi Vajargah, A., Ma, Z. Hoxha, B.B., van Oort, E. 2019. A Data-Driven Approach to Predict Frictional Pressure Losses in Polymer-Based Fluids. *SPE/IADC Drilling Conference 2019*. SPE-194132-MS. <http://doi.org/10.2118/194132-MS>
- Johnson, M.D., **Gul, S.**, Karimi Vajargah, A., Ma, Z. Hoxha, B.B., van Oort, E. 2018. Real-Time Friction Factor Monitoring: Drag Reduction Characterization of Polymer-Based Fluids. *AADE National Fluids Conference*. AADE-18-FTCE-118.
- Gul, S.**, Kuru, E., Parlaktuna, M. 2017. Experimental Investigation of Cuttings Transport in Horizontal Wells Using Aerated Drilling Fluids. *ADIPEC 2017*. SPE-188901-MS. <http://doi.org/10.2118/188901-MS>.

Skills & Certifications

- LinkedIn Certificate:** Apache Spark Essential Training / 2021
- LinkedIn Certificate:** Applied Machine Learning: Foundations/ 2021
- LinkedIn Certificate:** Azure Machine Learning Development: 1 Basic Concepts / 2021
- LinkedIn Certificate:** Azure Machine Learning Development: 2 Learning ML Studio / 2021
- LinkedIn Certificate:** Learning Azure DevOps / 2021
- UDEMY Certificate:** Deep Learning A-Z™: Hands-On Artificial Neural Networks / 2020
- UDEMY Certificate:** Artificial Intelligence A-Z™: Learn How to Build an AI/ 2019
- UDEMY Certificate:** Machine Learning A-Z™ Hands-On Python & R in Datascience / 2018
- UDEMY Certificate:** Python for Data Science and Machine Learning Bootcamp / 2018
- WellSHARP Combined Surface and Subsea Well Control** , Valid Until May 2020
- Software and Coding**, Python, R, SAS, Matlab, K&M ERA, Spotfire, ANSYS CFX, Adams