

Summary

Career highlights:

- Earned a Ph.D. in Engineering and an M.Sc. in Statistics from The University of Texas at Austin, reflecting a robust interdisciplinary skill set.
- Currently working as a Senior Data Scientist at Pioneer Natural Resources since 2021, responsible for developing and deploying machine-learning solutions using data from various resources.
- Demonstrated success in delivering impactful projects, notably improving operational efficiency within the company and contributing to savings exceeding \$10 million/year.
- Recognized as a diligent and motivated problem solver, consistently driving advancements in data science initiatives.

Skills: Python, SQL, Apache-airflow, Docker, Azure, scikit-learn, PyTorch, node.js

Education

The University of Texas at Austin, Austin, Texas

Doctor of Philosophy in Engineering, May 2021

Master of Science in Statistics, December 2020

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 Engineering, February 2017

Bachelor's of Science in Engineering, May 2014

Work Experience

Pioneer Natural Resources, Irving, Texas

Senior Data Scientist

June 2021 - Present

- Developed and deployed ML regression and classification models for predictive, prescriptive and forecasting analysis.
- Deployed streaming analytics solutions and 24 real-time alerting systems for drilling rigs.
- Developed 7 different dashboards for real-time operation monitoring using streaming-data and ML models.
- Projects contributed to a significant performance improvement and non-productive time reduction in operations (savings exceeding \$10 million/year.)

Pioneer Natural Resources, Irving, Texas

Data Science Intern

May 2019 - Aug 2019 / May 2020 - Aug 2020

- High-frequency data analysis, predictive models and real-time dashboards.

R5 Automation, Austin, Texas

Data Science Intern

Jun 2018 - Aug 2018

The University of Texas at Austin, Austin, Texas

Graduate Research Assistant

Sep 2017 - May 2021

BM Holding, Aydin-Denizli, Turkey & Djibouti, East Africa

Field Engineer

Aug 2015 - Jul 2017

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

Field Engineer

Jul 2014 - Jul 2015

Skills & Certifications

Software and Coding: Python, SQL, Apache-airflow, Docker, Azure, scikit-learn, PyTorch, node.js, Pandas, Numpy, Tensorflow, Keras, Streamlit, R, SAS

UDEMY Certificate: Apache Airflow / 2023

Academy Accreditation: Databricks Lakehouse Fundamentals / 2023

LinkedIn Certificate: Learning Rest APIs / 2022

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

Patents

van Oort, E., **Gul, S.** 2023. Solids analysis of drilling and completion fluids. *US20230272710A1 - pending*

Xue J., Jayaram, V., Malepati, O.R., **Gul, S.** 2023. Integrated drilling dysfunction prediction. *US20230111036A1 - pending*

Selected 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., Shiriyeve, 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., 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>

Work Authorization: Green Card holder, authorized to work in the United States without the need for any sponsorship.