

**Ahmed Alsubaih**

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## SUMMARY OF EXPERIENCE

- **Drilling and Reservoir Engineering Expertise:** Over 17 years of experience in the oil and gas industry, specializing in **drilling, workover, reservoir, and production operations engineering**. Significant expertise in wellbore instability analysis, well integrity, and geomechanics.
  - **Project Management and Technical Leadership:** Proven track record of managing large-scale drilling and workover projects, from **planning and execution** to **cost control** and **HSE compliance**. Lead teams across various operations, ensuring successful outcomes and minimizing non-productive time (NPT).
  - **Advanced Simulation and Analytical Skills:** Proficient in utilizing **advanced petroleum software** such as **Pason Optimizer, CMG, Saphir, Prosper, and Landmark**. Strong experience in **finite element analysis** and **data-driven decision-making** through the application of **machine learning** and **statistical modeling**.
  - **Research and Innovation in Well Integrity:** Extensive research experience at the University of Texas and the University of Houston on CO<sub>2</sub>/brine storage integrity for **carbon capture and storage (CCS)**, **well integrity**, and **smart injection strategies**.
  - **Cross-Disciplinary Technical Knowledge:** Expertise in **hydraulic fracturing, reservoir management**, and **economic analysis** for efficient resource utilization. Strong understanding of **IADC** and **API** guidelines, with the ability to plan, execute, and optimize drilling operations in complex environments.
  - **Training and Mentorship:** Experience in **teaching** and **mentoring** students and professionals, as well as conducting **industry training sessions** on petroleum engineering, drilling technologies, and safety standards.
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## EDUCATION

**University of Texas at Austin** | Austin, Texas

**PhD in Petroleum Engineering** (2023 – Present)

**Research Focus:** Storage Integrity in Carbon Capture and Storage (CCS), Hydrogen, and Methane storage, well and drilling designs, well and reservoir integrity, geomechanics, and injection strategies.

**University of Houston** | Houston, Texas

**PhD Coursework in Petroleum Engineering** (2021 – 2023)

**Missouri University of Science and Technology** | Rolla, Missouri

**Master's in Petroleum Engineering** (2016)

**Master's Project:** Shale Instability of Deviated Wellbores in Southern Iraqi Fields

**Technical Engineering College** | Basra, Iraq

**B.S. in Fuel and Energy Engineering** (2006)

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## **PROFESSIONAL EXPERIENCE**

### **Senior Wellsite Leader**

**British Petroleum ROO** | Basra, Iraq (2022 – 2024)

- Ensured compliance with BP policies and site safety regulations.
- Monitored well operations, minimizing downtime and controlling costs.
- Evaluated staff competency and implemented Continuous Improvement Processes at rig sites.
- Led rig site meetings to align team objectives, assess risks, and deliver successful operations.
- Reviewed and implemented changes to well programs to improve effectiveness.

### **Drilling Supervisor**

**Bashnift International** | Sawama, Iraq (2021 – 2022)

- Planned operational strategies and drilling programs.
- Ensured adherence to HSE standards during drilling operations.
- Managed well site operations, including drilling, running casing, and BOP testing.

### **Reservoir Engineer**

**ExxonMobil Project WQ1-FOD** | Basra, Iraq (2018 – 2021)

- Managed water flooding strategies and well logging interpretation.
- Conducted reservoir surveillance and field development.
- Performed well test interpretation to optimize reservoir performance.

### **Drilling Supervisor**

**Lukoil Project WQ2** | Basra, Iraq (2011 – 2018)

- Excellent understanding of directional drilling and formation evaluation concepts.
- Planned and executed oil and gas drilling activities as part of a high-performance team.
- Conducted failure analysis and optimized drilling performance, minimizing NPT.
- Developed exploratory and development well plans, including bit selection, BHA configuration, mud programs, and casing data.

### **Cementing Engineer**

**South Oil Company** | Basra, Iraq (2009 – 2011)

- Prepared cementing programs and simulations to enhance well integrity.
- Executed cement design and ensured proper wellbore isolation.

### **Workover Engineer**

**Iraqi Drilling Company** | Basra, Iraq (2009)

- Supervised well stimulation, wirelines, zone isolation, well perforation, casing damage repairs, and X-tree maintenance.
- Implemented solutions to enhance well productivity and ensure safety.

### **Drilling Engineer Trainee**

**Iraqi Drilling Company** | Basra, Iraq (2008 – 2009)

- Gained experience in rig tools, drilling optimization, cementing, and daily drilling reports.
- Wrote drilling, cementing, mud, and HSE reports.
- Conducted well control operations and supported drilling optimization activities.

### **Production Engineer**

**South Oil Company** | Basra, Iraq (2007 – 2008)

- Monitored production rates and planned rework processes to improve production.
- Reviewed and optimized production methods, ensuring efficiency and safety.
- Ensured well pressure monitoring and implemented measures to enhance equipment performance.

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## **RESEARCH EXPERIENCE**

### **Graduate Research Assistant**

**University of Texas at Austin**

- Conducting simulations on CO2/brine interactions using PHREEQC to optimize CCS site integrity.
- Research on well integrity in oil, gas, and geothermal wells.
- Developing smart injection strategies with real-time monitoring and AI tools.

**Research Assistant**  
**University of Houston**

- Evaluated fracture containment during CO2 injection using geomechanical simulations.

**Master's Research**  
**Missouri University of Science and Technology**

- Conducted an in-depth study on shale instability in deviated wellbores in southern Iraqi fields, focusing on geomechanical challenges and their mitigation.

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## **TEACHING EXPERIENCE**

**Adjunct Lecturer**  
**Basrah University for Oil and Gas** | Basra, Iraq

- Delivered courses on drilling and production engineering.
- Supervised senior projects focused on drilling and geomechanics.

**Training Manager and Instructor**  
**Alqiwa Training Company** | Dubai, UAE

- Conducted training sessions on petroleum engineering and drilling technologies.

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## **PUBLICATIONS**

**Alsubaih, Ahmed**, Sepehrnoori, Kamy, and Delshad, Mojdeh. "Environmental Impacts of Orphaned and Abandoned Wells: Methane Emissions, and Implications for Carbon Storage." Applied Sciences, Vol. 14, 11518, 2024.

Abbas, Mohammed A., Al-Mudhafar, Watheq J., **Alsubaih, Ahmed**, Al-Maliki, Ali, and Ali Al-Sukaini. "Developing a Novel Machine Learning-Based Petrophysical Rock Typing (PRT)

Classification: Applied on Heterogenous Carbonate Reservoirs." Paper presented at the SPE Annual Technical Conference and Exhibition, New Orleans, Louisiana, USA, September 2024.

**Alsubaih, Ahmed**, Sepehrnoori, Kamy, Lopez Manriquez, Alberto, Espinoza, D. Nicolas, Allawi, H. Raed, and Swadi Hayfaa. "A Statistical Approach to Estimate the Drilling Mud Window Based on Field Data and Ten Failure Criteria in Depleted Reservoirs - New Modified Failure Criterion." Paper presented at the 58th U.S. Rock Mechanics/Geomechanics Symposium, Golden, Colorado, USA, June 2024.

**Ahmed, Alsubaih**, and Swadi Hayfaa. "Trenchant Sensitive and Uncertainty Analyses to Enhance Hydraulic Fracturing Design." Paper presented at the 55th U.S. Rock Mechanics/Geomechanics Symposium, Virtual, June 2021.

**Ahmed, Alsubaih**, Hayfaa, Swadi, Ali, Jameel, Sarah, Abd Ali, Abdulrahman, Almanaseer, Madi, Sadi, and Alhajaj Malak. "Hydraulic Fracture Design to Improve Well Injectivity in Southern Iraqi Limestone Reservoir.." Paper presented at the 55th U.S. Rock Mechanics/Geomechanics Symposium, Virtual, June 2021

**Ahmed, Alsubaih**, Hayfaa, Swadi, Hussien, Abdulrida, Maher, Husain, Madi, Sadi, and Alhajaj Malak "Extensive Hole Cleaning Optimization to Mitigate Wellbore Instability Challenges in Shale Formations." Paper presented at the 55th U.S. Rock Mechanics/Geomechanics Symposium, Virtual, June 2021.

**Alsubaih, Ahmed A.**, Hayfaa, Swadi, Alboshawi, Hassan S., Alaa, Asamer, Al, lawe, Erfan, M., Sawdi, Madhi, Al, Asadi, and H. Lubna. "Reservoir Geomechanics Simulation to Optimize Reservoir Management in Southern Iraq Fields." Paper presented at the 54th U.S. Rock Mechanics/Geomechanics Symposium, physical event cancelled, June 2020.

Al-Mudhafar, Watheq J., Al lawe, Erfan M., and **Ahmed Alsubaih**. "Bayesian Sensitivity Analysis to Enhance History Matching Through Shale Oil Reservoirs." Paper presented at the 53rd U.S. Rock Mechanics/Geomechanics Symposium, New York City, New York, June 2019.

Alhuraishawy, Ali K., Wei, Mingzhen , **Alsubaih, Ahmed A.**, Bai, Baojun , and Abdullah Almansour. "Evaluation of Gel Treatment in Fractured Reservoir Using Embedded Discrete Fracture Model: Experimental and Simulation Investigation." Paper presented at the Abu Dhabi International Petroleum Exhibition & Conference, Abu Dhabi, UAE, November 2018.

**Ahmed, A. Alsubaih**, Hayfaa, L. Swadi, Nuhad, Alkanaani, Erfan, M. Al lawe, Ahmed, I. Aljarah, Swadi, Madhi, and K. Khamees Tariq. "Investigation of the Rock Strength Anisotropy on the

Wellbore Stability Analysis." Paper presented at the 53rd U.S. Rock Mechanics/Geomechanics Symposium, New York City, New York, June 2019.

Khamees, Tariq K., Flori, Ralph E., **Alsubaih, Ahmed A.**, and Ali K. Alhuraishawy. "Modeling the Effects of Salinity, Polymer Rheology, Temperature, and Reservoir Wettability on the Performance of In-Depth Gel Treatment Coupled with Surfactant and Polymer Flooding." Paper presented at the Abu Dhabi International Petroleum Exhibition & Conference, Abu Dhabi, UAE, November 2018.

**Alsubaih, Ahmed**, Albadran, Firas, Abbood, Nabeel, and Nuhad Alkanaani. "Optimization of the Tripping Parameters to Prevent the Surge Related Wellbore Instability." Paper presented at the 52nd U.S. Rock Mechanics/Geomechanics Symposium, Seattle, Washington, June 2018.

**Alsubaih, Ahmed** , Albadran, Firas , and Nuhad Alkanaani. "Mechanical Specific Energy and Statistical Techniques to Maximizing the Drilling Rates for Production Section of Mishrif Wells in Southern Iraq Fields." Paper presented at the SPE/IADC Middle East Drilling Technology Conference and Exhibition, Abu Dhabi, UAE, January 2018

**Alsubaih, Ahmed. A.**, Dahm, Haider. H., and Ihsan Alsubaih. "History Matching, Sensitivity and Uncertainty Analysis to Improve Wellbore Stability Model Predictions." Paper presented at the 51st U.S. Rock Mechanics/Geomechanics Symposium, San Francisco, California, USA, June 2017.

**Alsubaih, A. A.**, and R. Nygaard. "Shale Instability of Deviated Wellbores in Southern Iraqi Fields." Paper presented at the 50th U.S. Rock Mechanics/Geomechanics Symposium, Houston, Texas, June 2016.

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## CERTIFICATIONS

- **IADC Well Control (Well Sharp)** | International Association of Drilling Contractors | 2023
  - **IBM Data Science Professional Certificate** | Coursera | 2020
  - **Machine Learning Specialization** | Stanford University | 2020
  - **Unconventional Reservoir Geomechanics** | Stanford University | 2020
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## TECHNICAL SKILLS

- **Simulation Tools:** CMG, PHREEQC, Pason Optimizer, MATLAB, Saphir, Prosper, Landmark, Stim Plan, Merakpeep, COMSOL Multiphysics, Abaqus, Hypermesh, Tnavigator, Techlog, Pipesim, Petrel , Drillbench
  - **Programming:** Python, SQL, R
  - **Data Analysis:** Machine Learning, Statistical Modeling, Reservoir Engineering
  - **Languages:** Arabic (Native), English (Fluent)
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## AFFILIATIONS

- **Society of Petroleum Engineers (SPE)**
- **American Rock Mechanics Association (ARMA)**
- **American Association of Drilling Engineers (AADE)**