TESLEEM LAWAL

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SUMMARY

I am a motivated PhD candidate with a strong academic and research background in reservoir engineering, numerical modeling, and big data analysis. I have a demonstrated track record of applying experimental and numerical research skills to oil & gas projects. I have also collaborated with 5+ industry sponsors to achieve their goals of enhancing oil production and minimizing carbon emissions using novel EOR methods. Furthermore, I have developed strong and effective interpersonal skills, evidenced through presentations at conferences and collaborations in teams with diverse technical backgrounds.

SKILLS

Technical Interests	EOR, PVT Fluid Sampling and Modeling, Special Core Analysis, Big Data Analysis
Programming	Python (NumPy, SciPy, Pandas, scikit-learn), C++, Fortran, MATLAB
Engineering Software	PVTsim, CMG, SolidWorks, ANSYS, LabVIEW, LaTeX
Soft Skills	Project Management, Teamwork, Technical Report Writing and Presentations

EDUCATION

University of Texas at Austin **Expected December 2024**
PhD, Petroleum Engineering Overall GPA: 3.87/4.0
Advisor: Dr. Ryosuke Okuno
Research Topic: Novel Methods of Water-Based Enhanced Oil Recovery.

University of Texas at Austin **August 2020**
Master of Science, Petroleum Engineering Overall GPA: 3.67/4.0
Advisor: Dr. Eric van Oort
Thesis Title: Mud Motor Failure Analysis Using Surface Sensor Data Features and Trends.

University of Texas at Arlington **May 2018**
Bachelor of Science, Mechanical Engineering, *summa cum laude* Overall GPA: 3.97/4.0

EXPERIENCE

Carbon UT Consortium, University of Texas at Austin **Austin, TX**
Doctoral Researcher August 2020 – Present

- Collaborate with industry sponsors on comprehensive EOR and fluid characterization studies in conventional and unconventional reservoirs. Deliver full technical reports and provide recommendations to optimize reservoir performance and improve oil recovery.
- Experimentally and numerically investigate the potential of novel fluids such as ketones and aqueous gas nanobubbles for EOR and carbon capture and storage (CCS) applications.
- Perform extensive high-pressure high-temperature experiments on petroleum cores, including reservoir condition corefloods, relative permeability, steady- and unsteady-state studies, and wettability determination.
- Conduct PVT analysis to examine the phase behavior of reservoir fluids, estimate hydrocarbon volumes, and aid reservoir characterization, fluid modeling and simulation efforts.
- Manage lab and train at least 4 new lab researchers on lab techniques, troubleshooting, and safety protocols.
- Use numerical simulation to history match data, forecast oil production, and improve future design.

RAPID Consortium, University of Texas at Austin **Austin, TX**
Graduate Researcher January 2019 – August 2020

- Improved drilling performance through big data analysis of drilling data with a focus on drilling dysfunctions.
- Developed a data analytics method to identify downhole motor failure causes and generated a cumulative damage index to improve failure prediction and prevention in low-cost drilling operations.
- Conducted data-driven analysis to explore drilling connection practices and propose optimized connection recipes to minimize negative impacts of connection/off-bottom practices on downhole tools.
- Identified the top 10 drilling activities for improvement and potential cost savings through extensive Invisible Lost Time (ILT) and statistical data analyses conducted on textual reports of various drilling activities.

Aerodynamics Research Center, University of Texas at Arlington **Arlington, TX**
Undergraduate Researcher January 2017 – August 2018

- Used SolidWorks to design and analyze 3D CAD models of mechanical parts and assemblies used in experiments with Pulsed Detonation Engines.
- Provided detailed 2D technical drawings to help machinists fabricate parts for Pulsed Detonation Engine experiments.
- Developed and implemented LabVIEW applications to acquire pressure sensor data during Pulsed Detonation Engine testing.

Graduate Teaching Assistant, University of Texas at Austin

- Served as teaching assistant for 2 graduate classes – *Advanced Thermodynamics & Phase Behavior* and *Advanced Well Construction*.

RELEVANT PROJECTS AND AWARDS

1st Place, UT SPE Local Paper Contest 2024 (PhD Division)

- Presented my PhD research in a 20-minute presentation to industry judges and was selected to represent the department at the SPE Regional Contest.

1st Place, UT PGE Energy AI Hackathon 2022 (Sponsors: ComboCurve, Pioneer, and BakerHughes)

- Developed a data analytics and machine learning workflow in Python to predict and determine the best oil-producing wells over a 2-year period.

Senior Design Project, University of Texas at Arlington

- Led a team of 4 students to develop a continually learning robotic framework consisting of a translating robotic arm and two mobile ground platforms with the capability to automatically sort and deliver objects to specified locations.

PEER-REVIEWED PUBLICATIONS

Lawal, T., Wang, H., and Okuno, R (2024). Aqueous Nitrogen-Nanobubble Dispersion and Supersaturation at Elevated Pressures up to 277 Bara. *Journal of Molecular Liquids*, **398**, 124340.

Achour, S.H., **Lawal, T.**, Sheng, K., and Okuno, R (2024). Thermodynamic Modeling of Aqueous Nanobubble Dispersion. *SPE Journal*, 1-19. SPE-215122-PA.

Wang, H., **Lawal, T.**, Achour, S.H., Sheng, K., and Okuno, R (2023). Aqueous Nanobubble Dispersion of CO_2 at Pressures up to 208 Bara. *Energy & Fuels*, **37**(24), 19726–19737.

Lawal, T., Wang, M., Abeykoon, G. A., Argüelles-Vivas, F. J., and Okuno, R. (2022). Effect of Chemical Partition Behavior on Oil Recovery by Wettability Alteration in Fractured Tight Reservoirs. *Energy & Fuels*, **36**(2), 797-805.

CONFERENCE PRESENTATIONS

Lawal, T., Wang, H., Mirzaei Paiaman, A., and Okuno, R. Aqueous Nanobubble Dispersion Of CO_2 For Enhanced Oil Recovery – Coreflooding And Huff-n-Puff Experiments. SPE Improved Oil Recovery, 2024.

Lawal, T., Mirzaei Paiaman, A., and Okuno, R. Aqueous Ketone Solution For Wettability Alteration In High-Salinity High-Temperature Carbonate Reservoirs. SPE Improved Oil Recovery, 2024.

Mirzaei Paiaman, A., Okuno, R., **Lawal, T.**, Sheng, K., et al. Techno-Economic-Environmental Analysis of CO_2 Storage and EOR in an Underdeveloped Field. SPE Improved Oil Recovery, 2024.

Achour, S.H., Sheng, K., **Lawal, T.**, and Okuno, R. Thermodynamic Modeling of Aqueous Nanobubble Dispersion. SPE Annual Technical Conference and Exhibition, 2023.

Lawal, T., Ashok, P., van Oort, E., Zheng, D., and Isbell, M. Real-Time Prediction of Mud Motor Failure Using Surface Sensor Data Features and Trends. SPE/IADC International Drilling Conference and Exhibition, 2021.

Ucherek, J., **Lawal, T.**, Prinz, M., Li, L., Ashok, P., van Oort, E., Gobert, T., and Mejia, J. Auto-Suggestive Real-Time Classification of Driller Memos into Activity Codes Using Natural Language Processing. IADC/SPE International Drilling Conference and Exhibition, 2020.

RELEVANT COURSEWORK

Advanced Reservoir Engineering, Advanced Thermodynamics and Phase Behavior, Advanced Well Construction, Transport Phenomena, Partial Differential Equations, Drilling Engineering, Numerical Methods for PDEs, Stochastic Systems & Control, Stochastic Models & Simulation, Intro to High-Performance Computing, Statistical Methods.