

SUMMARY

Skilled **Reservoir Engineer** with solid background in oil and gas industry, specializing in simulation/modeling and optimization algorithms. Prior experience working in oil fields across Vietnam, Russia, and the U.S. Trusted to oversee projects involving high stakes and aggressive timelines, driving operational efficiency while improving communication between key stakeholders. Strong researcher capable of gaining clients' trust and delivering strong results. Fully authorized to work in the United States (lawful permanent resident). *Technical skills include:*

Fortran, MATLAB, VBA, C/C++/C#, Python, Eclipse, CMG, tNavigator, Petrel, Olga, PVTsim, OFM, LabView, Microsoft Office (Word, Excel, PowerPoint)

EDUCATION

UNIVERSITY OF TULSA, Tulsa, OK

PhD in Petroleum Engineering | 4.0 GPA

Dec 2015

Thesis: Ensemble-based Optimization for History Matching, Surveillance Optimization, and Uncertainty Quantification

Master of Science in Petroleum Engineering | 4.0 GPA

May 2011

Thesis: Productivity Impairment Mechanisms in Fractured Tight Gas Well

Bachelor of Science in Petroleum Engineering, minor in Computer Science | 4.0 GPA

May 2009

PROFESSIONAL EXPERIENCE

VIETNAM PETROLEUM INSTITUTE, Hanoi, Vietnam

Reservoir Engineer

Mar 2016 – May 2017

- Constructed Eclipse simulation models for oil fields in Vietnam and Russia, consistently earning good history match.
- Devised optimal development strategy for existing fields by optimizing well count, well locations, perforations and injections scheme, improving oil recovery by up to 10%.
- Led team of 4 reservoir engineers in conducting enhanced oil recovery (EOR) studies involving low-salinity water flooding and water shut-off polymers.
- Used Olga and PVTsim to investigate condensate banking and liquid loading for Hai Thach field, improving production by extending the life of the well by three years.

SHELL INTERNATIONAL E&P INC., Houston, TX

Post Graduate Intern

May 2014 – Aug 2014

- Implemented and benchmarked 3 different algorithms in Fortran and C to optimize well locations and controls.
- Demonstrated to asset team that oil production of Vito field could be increased by up to 5% or \$500 million through optimization.
- Collaborated with Vito engineers to tune the algorithms to their needs and develop an easy-to-use interface.

Post Graduate Intern

May 2013 – Aug 2013

- Wrote a prototype Fortran code to implement ensemble smoother history matching method for the CMG simulator.
- Demonstrated the method's capability in the Perdido oil field, where millions of model parameters could be simultaneously adjusted compared to a few dozen using existing methods, leading to 30% better match quality.
- Method's success facilitated future collaborations between the research and asset teams, expanding trust in testing new algorithms and models.

CONOCOPHILLIPS COMPANY, Houston, TX

Reservoir Engineer Intern

May 2012 – Jun 2012

- Extended existing single model production optimization workflow to multimodel workflow using Python, leading to more confident results and reducing geological risks.
- Built a benchmarking geomodel based on the WestSak type pattern model using Petrel.

- Demonstrated to the Subsurface Technologies Department the advantages and challenges of using new optimization workflow in WestSak reservoir.

Reservoir Engineer Intern

Jun 2011– Aug 2012

- Investigated the concept of mutual information in information theory and its applicability in reservoir surveillance, resulting in an innovative and quicker way to determine the value of information of surveillance operation.
- Developed workflow to quantify the uncertainty reduction upon obtaining additional information from the field.
- Wrote Python codes to incorporate the developed workflow into ConocoPhillips' data analysis infrastructure.

ACADEMIC EXPERIENCE

UNIVERSITY OF TULSA, PETROLEUM ENGINEERING DEPARTMENT, Tulsa, OK

Graduate Research Assistant

Aug 2011 – Dec 2015

- Developed new history matching techniques using iterative ensemble smoother and ensemble smoother with multiple data assimilation.
- Created a novel method based on information theory to quantify the expected uncertainty reduction prior to a surveillance operation.

Graduate Research Assistant

May 2009 – May 2011

- Performed experiments and mathematical modeling of polymer cleanup in fractured wells.
- Modeled the effects of water blocking and salt deposition in gas wells.

Undergraduate Research Assistant

May 2007 – Aug 2008

- Simulated the performance of gas flow in porous media by writing a C++ program.
- Built a LabView system to automate the recording of experimental data.
- Executed laboratory experiments to investigate salt crystallization in rock cores.

JOURNAL PUBLICATIONS

- **Le, D.**, Emerick, A., and Reynolds, A. An Adaptive Ensemble Smoother with Multiple Data Assimilation for Assisted History Matching, [SPE Journal](#), 2016.
- **Le, D.** and Reynolds, A. Estimation of Mutual Information and Conditional Entropy for Surveillance Optimization, [SPE Journal](#), 2014.
- **Le, D.** and Reynolds, A. Optimal Choice of a Surveillance Operation using Information Theory, [Computational Geosciences](#), 2014.
- **Le, D.**, Hoang, H., and Mahadevan, J. Gas Recovery from Tight Sands: Impact of Capillarity, [SPE Journal](#), 2012.
- **Le, D.** and Mahadevan, J. Productivity Loss in Gas Wells Caused by Salt Deposition, [SPE Journal](#), 2011.
- **Le, D.**, Hoang, H., and Mahadevan, J. Impact of Capillary-Driven Liquid Films on Salt Crystallization, [Transport in Porous Media](#), 2009.

CONFERENCE PROCEEDINGS

- **Le, D.**, Younis, R., and Reynolds, A. A History Matching Procedure for Non-Gaussian Facies based on ES-MDA, [SPE RSS 2015](#).
- **Le, D.**, Emerick, A., and Reynolds, A. An Adaptive Ensemble Smoother with Multiple Data Assimilation for Assisted History Matching, [SPE RSS 2015](#).
- **Le, D.** and Reynolds, A. Estimation of Mutual Information and Conditional Entropy for Surveillance Optimization, [SPE RSS 2013](#).
- **Le, D.** and Reynolds, A. Optimal Choice of a Surveillance Operation using Information Theory, [ECMOR XIII](#).
- **Le, D.**, Mahadevan, J., and McQueen, K. Gel Damage Remediation by Evaporative Mechanisms: A Laboratory Investigation, [SPE WRM 2010](#).
- **Le, D.** and Mahadevan, J. Productivity Loss in Gas Wells Due to Salt Deposition, [SPE WRM 2010](#).
- Mahadevan, J., **Le, D.**, and Hoang, H. Cleanup of Water Blocks in Gas Wells by Capillary Suction and Evaporation, [SPE HFTC 2009](#).