Sam Mousavi

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Personal Website

EDUCATION

2022 – 2026 **Doctor of Philosophy**
Chemical Engineering
Aalto University, Espoo, Finland.

2017 – 2020 **Master of Science**
Petroleum Engineering - Reservoirs
Tarbiat Modares University, Tehran, Iran.

2013–2017 **Bachelor of Science**
Petroleum Engineering - Reservoirs
Shiraz University, Shiraz, Iran.

WORK EXPERIENCE

OCT 2022 – SEP 2026 (FT)

Aalto University
Research Assistant

Developed innovative predictive models for L-L extraction,
Developed a decanter model for the prediction of the surfactant-induced liquid-liquid phase separation process,
Population balance modeling (PBM) of a column to predict and optimize the extraction efficiency of surfactant-induced system,
CFD modelling for the system and verified the results,
Validated with experimental data to ensure the accuracy.

FEB 2018 – FEB 2022 (FT)

MAPSA Company
Sharepoint and PowerBI Developer

Configuring SharePoint systems to specified requirements,
Designing, coding, and implementing scalable applications,
Extending SP functionality with forms, web parts, etc.,
Providing systems training to staff and customers,
Develop operational automated reports and dashboards,
Be experienced in tools and systems on MS SQL Server BI Stack, including SSRS and TSQL, Power Query, PowerBI, and DAX,
Have knowledge of database fundamentals such as multidimensional database design, relational database design.

FEB 2018 – DEC 2019 (PT)

Permlab Research Center, Tarbiat Modares University.
Research Assistant

Study that investigates pore-scale flow processes through a heterogeneous carbonate rock. The transparent and reproducible microfluidic network has been manufactured using 3D printing technology (DLP) from a real complex porous geometry (CT-Scanned rock).

JAN 2017 – MAR 2019 (PT)

EOR Research Center, Shiraz University
Research Assistant

a that study investigates the impact of Co_3O_4 nano-particles with concentrations of 0.01, 0.1 and 1 wt percent on IFT of brine solution and heavy crude oil system.

RESEARCH EXPERIENCE

Modeling oil/water emulsion separation in batch systems with population balances in the presence of surfactant.
The study developed an effective model for batch gravitational separation of surfactant induced liquid–liquid dispersions, integrating decantation with a high-order moment conserving method in population balances (PBM-HMMC).
https://doi.org/10.1016/j.ces.2024.120558

Machine-Learned Surrogate Models for Efficient Oil Well Placement Under Operational Reservoir Constraints (2023).
Utilizing machine learning models, this research offers a novel approach for efficiently determining optimal well locations and operations in various reservoir scenarios, achieving prediction accuracy exceeding 95 percentage in primary recovery scenarios.
https://doi.org/10.2118/217467-PA

Investigation of percolation-like random porous media by 3D Printed Micromodel (2021).
Study presents a novel comprehensive framework for manufacturing 2.5D realistic micro-fluidic device from pore-scale rock images that are validated through CFD simulations.
https://doi.org/10.2516/ogst/2021029

Introduction of an Integrated Workflow for Optimal Well Placement Using Machine Learning Methods. (2021).
Several algorithms and methods were used to build models in order to assess the well placement problem in heterogeneous reservoir models. xGBoost and LightGBM algorithms are then used to build intelligent models.
https://events.interpore.org/event/25/contributions/3881

Optimal well placement using machine learning methods: multiple reservoir scenario (2020).
A machine learning approach and an experimental design method were compared in detail. Their efficiency in predicting the NPV of a well-placement problem through multiple homogeneous and heterogeneous reservoir scenarios differs significantly.
https://doi.org/10.2118/200752-MS

The impact of Co3O4 nanoparticles on interaction of heavy oil and brine mixture (2017).
It investigated the impact of Co_3O_4 nanoparticles with various concentrations on the IFT of brine solution and heavy crude oil system. The results confirmed that adding Co_3O_4 nanoparticles to water, compared to the absence of nanoparticles, reduced IFT.
https://doi.org/10.2118/200752-MS

CONFERENCES

ORAL PRESENTATION	ECCE&ECAB, 2023.
POSTERS	InterPore, 2021. SPE Norway Subsurface, 2020.

COMPUTER SKILLS

P. LANGUAGES	Python, MATLAB.
CFD	ANSYS Fluent, OpenFoam, Comsol.
P.E. SOFTWARE	SLB Package (Petrel, Eclipse, PVTi, OLGA, PIPESIM), Pansys, UTCHEM.
CA D/M/E	CATIA, Keyshot, Design Expert, ImageJ.
WEB DEV.	HTML, CSS, JS, MongoDB, SQL.
S.P. DEV.	Sharepoint, Nintex, PowerBI, SSRS.

AWARDS

2020 **Master Graduated with A Grade**
Tarbiat Modares University

2019 **Appreciated group in Second National Petroleum Engineering Competition**
Tehran Polytechnic

2013 **State Scholarship**
Shiraz University

SELECTED COURSES

Process Modeling. (5/5)
Dr. Ville Alopaeus, Aalto University.
Fluid Flow in Process Units. (5/5)
Dr. Ville Alopaeus, Aalto University.
Reservoir Modeling. (17.5/20)
Dr. Saeed Sadeghnejad, Tarbiat Modares University.
Fractured Reservoir Characterization. (17.8/20)
Dr. Saeed Sadeghnejad, Tarbiat Modares University.
Flow in Porous Media. (19.5/20)
Dr. Arezou Jafari, Tarbiat Modares University.
Advanced Engineering Mathematics. (17.0/20)
Dr. Arezou Jafari, Tarbiat Modares University.
SQL for Data Science.
Sadie St. Lawrence, University of California, Davis.

REFERENCE

NAME **Dr. Saeed Sadeghnejad,**
POSITION Assistant Professor
EMPLOYER Department of Chemical Engineering
Tarbiat Modares University
EMAIL *Sadeghnejad@modares.ac.ir*

NAME **Professor Mohamad Reza Malayeri,**
POSITION Full Professor
EMPLOYER Department of Petroleum Engineering
Shiraz University
EMAIL *Malayeri@shirazu.ac.ir*

NAME **Dr. Mehdi Ostadhassan,**
POSITION Distinguished Professor
EMPLOYER Department of Geosciences
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