

Sam (Mahdi) Mousavi



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📱 LinkedIn Profile

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*

Successfully developed a decanter model for the prediction of the liquid-liquid extraction process,
Implemented and validated an extraction stage model to improve the accuracy of liquid-liquid extraction predictions,
Population balance modeling (PBM) of a column to optimize the separation efficiency,
Carried out Computational Fluid Dynamics (CFD) modelling for the system and verified the results,
Validated the model with experimental data to ensure the accuracy and reliability of the predictions,
Contributed to the advancement of the field by developing innovative predictive models for liquid-liquid extraction processes.

FEB 2018 – FEB 2022 (FT)

MAPSA Company *Sharepoint and PowerBI Developer*

Meeting with the design team to review application requirements,
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,
Understand business requirements to align reporting applications,
Be experienced in tools and systems on MS SQL Server BI Stack, including SSRS and TSQL, Power Query, PowerBI, and DAX,
Be able to quickly shape data into analytic solutions,
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).

WORK EXPERIENCE (CONTINUED)

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.

MAY 2015 – AUG 2018 (PT)

SOSA Poverty NGO *Volunteer (Child labor activist)*

Head of education department. (2016–2017).
Mathematics teacher. (2014–2016)

RESEARCH EXPERIENCE

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 accuracies 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 microfluidic 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 Co_3O_4 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>

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 <i>Tarbiat Modares University</i>
2019	Appreciated group in Second National Petroleum Engineering Competition <i>Tehran Polytechnic</i>
2013	State Scholarship <i>Shiraz University</i>

SELECTED COURSES

Flow in Porous Media. (19.5/20)

Dr. Jafari, Tarbiat Modares University.

Reservoir Modeling. (17.5/20)

Dr. Sadeghnejad, Tarbiat Modares University.

Advanced Engineering Mathematics. (17.0/20)

Dr. Jafari, Tarbiat Modares University.

Fractured Reservoir Characterization. (17.8/20)

Dr. Sadeghnejad, 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 <i>Tarbiat Modares University</i>
EMAIL	<i>Sadeghnejad@modares.ac.ir</i>
NAME	Professor Mohamad Reza Malayeri,
POSITION	Full Professor
EMPLOYER	Department of Petroleum Engineering <i>Shiraz University</i>
EMAIL	<i>Malayeri@shirazu.ac.ir</i>
NAME	Dr. Mehdi Ostadhassan,
POSITION	Distinguished Professor
EMPLOYER	Department of Geosciences <i>Christian-Albrechts-Universität zu Kiel</i>
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