

Mohammad Reza Hajsaeedi Sadegh

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SUMMARY

I am a Geomechanics Engineer with an MSc in Petroleum Engineering and extensive industry experience. My expertise lies in Geomechanical Modeling, Numerical Modeling, and Machine Learning, demonstrated through impactful publications. I am passionate about practical experimentation and laboratory investigations. Proficient in Python and specialized drilling software, I currently serve as a PhD student at NTNU.

EDUCATION

MSc. Petroleum Engineering **Iran**
Shahrood University of Technology **Sep 2014 – Jul 2018**

- Thesis: *Wellbore Stability Analysis and Determination of Optimized Drilling Orientation in High Fractured Reservoir (Case Study: Parsi Oilfield)*
- Keywords: Wellbore Stability, Fracture Reservoirs, Discrete Element Modeling (DEM), Discrete Fracture Network (DFN)

BSc. Mine Engineering **Iran**
Shahrood University of Technology **Sep 2010 – Jul 2014**

- **Final Project:** *1D MEM Model of a Vertical Wellbore*

EXPERIENCE

Geomechanics and Drilling Eng. **Tehran, Iran**
Asia Geo Petro Tech **Dec 2020 – Feb 2025**

Responsibilities:

- Conduction Geomechanics studies
- Geomechanical Modeling (Jewel Suits Geomechanics, Techlog and etc.)
- Data gathering and field work (Core and Plug Selection)
- Analysis and interpretation of drilling operation and development of related Python codes
- Developing project proposal

Completed Projects:

- Wellbore stability project for National Iranian Oil Company (NIOC)
- Dana Energy company project- Drilling operation analysis using PetroIDM Software
- Pezhvak company project- Drilling operation analysis using PetroIDM Software
- POGC project- Drilling operation analysis using PetroIDM Software

Geomechanics Eng. **Shahrood, Iran**
Iranian Petroleum Geomechanics Association (IRPGA) **Jul 2018 – May 2019**

Responsibilities:

- Conduction Geomechanics studies
- Geomechanical Modeling (Jewel Suits Geomechanics, Techlog and etc.)
- Data gathering
- Developing project proposal

Completed Projects:

- Roadmap and innovation network development in petroleum geomechanics applications

Teaching Assistance

Teaching Assistance *Geophysics Bsc. class*

Shahrood University of Technology
Dec 2014 – Jun 2015

- I held classes to assist students with their homework.

Laboratory Assistance *Mineralogy Lab., B.Sc.*

Shahrood University of Technology
Sep 2011 – Dec 2011

- I helped Dr. Abedi during class.

Research Interests

- Geomechanics 2D and 3D Modeling
 - ✓ Wellbore Stability
 - ✓ Cap-Rock Integrity
 - ✓ Reservoir Modeling
- Numerical Modeling
- Drilling Optimization
- Machine Learning, Neural Network and deep learning

AWARDS

- The second-ranked graduated in mining engineering: exemption of national entrance examination for M.S. degree – Shahrood University of Technology

IT SKILLS

- Python
- Techlog
- JewelSuite GeoMechanics
- LaTeX
- 3DEC

LANGUAGE SKILLS

- Persian (mother tongue)
- English (working proficiency)
IELTS Overall Score: 6.5 (Listening: 7.5, Writing: 6.5, Speaking: 6.5, Reading:6)

Publications

Journal Papers

[1] Shadfar Davoodi, Hung Vo Thanh, David A. Wood, Mohammad Mehrad, **Mohammad Reza Hajsaeedi**, Valeriy S. Rukavishnikov, Combined deep-learning optimization predictive models for determining carbon dioxide solubility in ionic liquids, Journal of Industrial Information Integration, 2024, Journal of Industrial Information Integration, [DOI: doi.org/10.1016/j.jii.2024.100662](https://doi.org/10.1016/j.jii.2024.100662).

[2] Matinkia, M., Hashemi, R., Mehrad, M., **Haj Saeedi, M. R.**, Velayati, A. (2022). "Prediction of Permeability from Well logs using a new hybrid machine learning algorithm". *Petroleum*, [DOI: 10.1016/j.petlm.2022.03.003](https://doi.org/10.1016/j.petlm.2022.03.003)

[3] Mehrad, M., Ramezanzadeh, A., Bajolvand, M., **Haj Saeedi, M. R.** (2022). "Estimating shear wave velocity in carbonate reservoirs from petrophysical logs using intelligent algorithms". *Petroleum Science and Engineering*, [DOI: 10.1016/j.petrol.2022.110254](https://doi.org/10.1016/j.petrol.2022.110254)

Conference Papers

[1] **Haj Saeedi, M. R.**, Ramezanzadeh, A., Tokhmchi, B., Nourozi, M., Parhizgar, M. R. (2017). "1D MEM Model of a Vertical Wellbore of Parsi Oilfield, with Mohr and Mogi Coulomb Criteria". In 1st National Conference on Applied Researches in Science and Engineering, Iran.

Other Interests

- Practicing Karate
- Practicing Violin
- Reading Books
- Traveling

References

[1] **Prof. Ahmad Ramezanzadeh**

Professor, Department of Mine Petroleum and Geophysics, Shahrood University of Technology,
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Teacher and Master's thesis Advisor

[2] **Dr. Behzad Tokhemchi**

Research Analyst V North Dakota department of transportation
Tel: +17013309125; Email: behzadtokhmechi@yahoo.com
Teacher and Master's thesis Advisor