Amir Nematollahi Sarvestani

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CONTACT INFORMATION:

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PROFILE:

Data Scientist and Petroleum Engineer with a research focus on leveraging advanced computational methods for geoscientific innovation. My work integrates 3D geological modeling, digital rock physics, and deep learning for image processing (SEM/micro-CT) to enhance shale reservoir characterization, petrophysical analysis, and reservoir simulation. Proficient in Python, Azure, Abaqus, and Power BI for developing data-driven insights that optimize resource development and de-risk subsurface projects. My research bridges the gap between geoscience and computational analytics. I am driven to create innovative, data-centric solutions that address challenges in petrophysics, sustainable resource development, and production optimization.

EDUCATION:

Ph.D. in Petroleum Engineering, China University of Geosciences, Wuhan, China **2025-2029**

- Research Focus: Image processing, deep learning, geometric modeling, and petrophysical analysis applied to unconventional reservoirs.

M.Sc. in Mining Engineering, Politecnico di Torino, Turin, Italy **(100/110)**, **2018-2021**

Alta Scuola Politecnica-**Double degree Politecnico di Milano and di Torino**, **2018-2019**

B.Sc. in Petroleum Engineering, Shiraz University, Shiraz, Iran, **2012-2017**

TEST SCORES:

GRE Scores: Total: **308**, Quantitative Reasoning: **164**, Verbal Reasoning: **142**, Analytical Writing: **3.5**, **DEC 2023**

IELTS Academic: **7.5** band score, Speaking: **7.0**, Writing: **7.0**, Reading: **8.0**, Listening: **8.0**, **March 2025**

RESEARCH INTERESTS:

3D geological modeling, digital rock physics, image processing and analysis, deep learning, SEM and micro-CT imaging, shale reservoir characterization, computational geomechanics, and reservoir simulation.

TECHNICAL SKILLS:

- Programming: Python (proficient), MATLAB, Fortran

- Image Analysis & AI: ImageJ, TensorFlow, PyTorch, OpenCV

- Geoscience Software: ArcGIS, Abaqus, Eclipse100, SolidWorks, Ventsim, WinProp, Pipesim

- Data Visualization & Cloud: Power BI, Azure, SQL

- Other: Microsoft Office, WordPress

RESEARCH EXPERIENCE:

- Develop and implement deep learning models to reconstruct 3 pore-scale models from 2D SEM images of shale samples.

- Apply image segmentation and stereological methods to quantify pore morphology, connectivity, and mineral distribution.

- Integrate petrophysical data to improve permeability and porosity predictions in heterogeneous reservoirs.

- Designed and simulated ventilation circuits for underground mines using Ventsim and numerical modeling.

- Published multiple peer-reviewed articles on fire safety, ventilation, and environmental modeling.

PUBLICATIONS:

Nematollahi Sarvestani, Amir, and Pierpaolo Oreste. 2023. "Effects of the Ventilation System by Using Jet Fans during a Fire in Road Tunnels" Applied Sciences 13, no. 9: 5618. https://doi.org/10.3390/app13095618

Nematollahi Sarvestani, A.; Oreste, P.; Gennaro, S. “Fire Scenarios Inside a Room-and-Pillar Underground Quarry Using Numerical Modeling to Define Emergency Plans.” Appl. Sci. 2023, 13, 4607. https://doi.org/10.3390/app13074607

Nematollahi Sarvestani, A.; Oreste, P.; Gennaro, S. “Improving environmental conditions of a Room and Pillar underground quarry using the numerical modeling of the ventilation system”, 2021, Mining Technology.

Carola Botto, Alberto Cannavo, Daniele Cappuccio, Giada Morat, Amir Nematollahi Sarvestani, Paolo Ricci, Valentina Demarchi, Alessandra Saturnino, “Augmented Reality for the Manufacturing Industry: The Case of an Assembly Assistant”, 2020 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW), Atlanta, GA, USA, https://doi.org/10.1109/VRW50115.2020.00068.

E. Bakyani, A. Taghizade, A. Nematollahi Sarvestani, F. Esmaeilzadeh and D. Mowla (2018), " Three-dimensional and two-pahse numerical simulation of fractured dry gas reservoirs", J. Petrol. Explor. Prod. Technology, https://doi.org/10.1007/s13202-017-0423-2.

Bakyani, A. , Namdarpoor, A. , Nematollahi Sarvestani, A. , Daili, A. , Ganji, S. and Esmaeilzadeh, F. (2018) "A Simulation Approach for Screening of EOR Scenarios in Naturally Fractured Reservoirs". International Journal of Geosciences, 9, 19-43. https://doi: 10.4236/ijg.201

TEACHING EXPERIENCE:

Teaching Assistant

Shiraz University

2012–2017

- Assisted in courses including Reservoir Simulation, Drilling Engineering, and Rock Mechanics.

- Graded assignments, held office hours, and supported lab sessions.

Instructor – Power BI and Azure

Faradars.org

2022

- Developed and delivered curriculum on data visualization and cloud computing for industry professionals.

PROFESSIONAL EXPERIENCE:

Data and Trading Analyst

Aminsazeh Gostaran Company (Bakren), Iran

2022–2025

- Performed market analysis, risk assessment, and financial planning using Python, SQL, and Power BI.

- Contributed to business growth through data-driven trading strategies.