Amir Nematollahi

AI & Energy Digital Transformation Specialist

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Function and Specialization

AI & Energy Digital Transformation Specialist

Subsurface Modeling | Digital Rock Physics | Machine Learning | Reservoir Analytics

Languages

English: Full Professional Proficiency

Italian: Basic Proficiency

Chinese: Basic Proficiency

Education

◆ **Ph.D.** in Petroleum Engineering China University of Geosciences, Wuhan, **China** | 2025–2029
Focus: AI-driven 3D Reconstruction, Digital Rock Physics, Reservoir Modeling

◆ **M.Sc.** in Mining Engineering **(100/110)**
Politecnico di Torino, **Italy** | 2018–2021
Thesis: Numerical Modeling of Underground Ventilation Systems.

Background

Amir brings interdisciplinary expertise in **Data Science**, **AI**, and **Petroleum Engineering**, with international academic and industry experience across China, Italy, and other countries.

He specializes in AI-driven 3D subsurface modeling, digital rock physics, and advanced data analytics to enhance reservoir characterization and reduce operational uncertainty. His work integrates **deep learning**, **computational modeling**, and **cloud-based analytics** to deliver scalable, data-centric solutions for energy and industrial applications.

He combines **strong technical execution (Python, TensorFlow, PyTorch, SQL, Azure, Power BI)** with domain expertise in reservoir engineering, numerical simulation, and production optimization.

Professional and Industry Experience: Key Highlights

AI & Data-Driven Reservoir Modeling – Current

Role: PhD Researcher | AI & Subsurface Modeling Specialist

Industry: Energy | Digital Transformation | AI in Geoscience

China University of Geosciences, Wuhan

2025 – Present

- Develop AI-based 3D reconstruction models for pore-scale reservoir characterization.
- Apply ML and image analytics to improve permeability and porosity prediction.
- Build workflows integrating Python, TensorFlow, and geoscience simulators.
- Support data-driven decision-making in unconventional reservoir analysis.

Data & Trading Analytics

Role: Data and Trading Analyst

Industry: Industrial Manufacturing | Financial Analytics (Bakren)

2022 – 2025

- Led market analysis, financial modeling, and risk assessment initiatives.
- Developed executive dashboards using Power BI and SQL for strategic decisions.
- Applied data-driven trading strategies to enhance profitability and operational efficiency.
- Implemented Azure-based solutions for scalable reporting and analytics.

Numerical Modeling & Engineering Simulation

Role: Engineering Research Specialist

Industry: Infrastructure | Mining | Environmental Systems

Politecnico di Torino, Italy

2018 – 2021

- Simulated underground ventilation systems using advanced numerical modeling.
- Optimized environmental and safety performance through computational simulation.
- Published peer-reviewed research in fire safety and infrastructure modeling.

STRATEGIC TECHNICAL EXPERTISE

AI & Machine Learning

Deep Learning, Computer Vision, 3D Reconstruction, Image Segmentation, Predictive Modeling

Programming & Data Engineering

Python (Advanced), SQL, MATLAB, Fortran

Energy & Reservoir Systems

Digital Rock Physics, Reservoir Simulation, Petrophysical Analysis, Eclipse100, WinProp, Pipesim

Cloud & Business Intelligence

Azure, Power BI, Data Visualization, Dashboard Development

Core Strengths

Digital Transformation | Energy Analytics | Computational Modeling | Risk Analysis | Executive Reporting

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SELECTED PUBLICATIONS & TECHNICAL CONTRIBUTIONS

Applied Sciences (2023) – *Tunnel Fire Ventilation Modeling*

Developed numerical airflow simulations to optimize smoke control and improve safety in tunnel infrastructure systems.

Applied Sciences (2023) – *Underground Quarry Fire Simulation*

Designed computational fire propagation models supporting emergency planning and ventilation risk mitigation.

Mining Technology (2021) – *Ventilation Optimization Modeling*

Improved underground airflow performance using numerical simulation, enhancing environmental and operational efficiency.

IEEE VRW (2020) – *Augmented Reality in Manufacturing*

Contributed to AR-based industrial assembly systems integrating digital visualization with operational workflows.

J. Petroleum Exploration & Production Technology (2018) – *Fractured Gas Reservoir Simulation*

Built 3D multiphase numerical models to improve reservoir performance prediction and EOR evaluation.

International Journal of Geosciences (2018) – *EOR Screening in Fractured Reservoirs*

Developed simulation-based methodology to support data-driven reservoir development decisions.

TEST SCORES (International Qualifications)

GRE (2023):

Total: 308 | Quantitative: 164 | Verbal: 142 | Analytical Writing: 3.5

IELTS Academic (2025):

Overall Band: 7.5

Reading: 8.0 | Listening: 8.0 | Speaking: 7.0 | Writing: 7.0

(Strong quantitative and English proficiency for international roles.)

PROFESSIONAL PROFILE & DIFFERENTIATION

AI-Driven Energy Systems Specialist with expertise in deep learning, numerical simulation, and industrial analytics.

International Experience

Professional and academic exposure across China, Italy, and Iran, operating in multicultural research and industry environments.

Technical Leadership & Impact

- Delivered professional-level training in Cloud & BI technologies (Azure, Power BI).
- Contributed to peer-reviewed research in infrastructure safety, reservoir simulation, and environmental modeling.
- Translates complex computational models into engineering and strategic insights.

Strategic Focus

Driving digital transformation in energy systems through AI-based modeling, reservoir analytics, and scalable data infrastructure.