Amir Nematollahi

Mining Engineer | Mine Planning & Optimization

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Function and Specialization

Mining Engineer | Open Pit & Underground Operations | Mine Planning & Optimization

Languages

English: Full Professional Proficiency

Italian: Basic Proficiency

Chinese: Basic Proficiency

Education

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

Background

Amir is a **Mining Engineer** with **4 years of hands-on experience** in both underground and open pit operations, combined with advanced expertise in numerical modeling, mine planning analytics, and engineering optimization.

Experienced in **open pit production coordination**, **haulage optimization**, **slope stability** considerations, and **operational planning**. Strong working knowledge of **underground mining systems** including **ventilation**, **ground control**, and **safety modeling** through **advanced academic and simulation-based research**.

Blend operational mine experience with **analytical and digital capabilities** (**Python**, **simulation tools**, **optimization modeling**) to improve **safety**, **efficiency**, and **long-term mine planning**.

Professional and Industry Experience: Key Highlights

AI & Data-Driven Reservoir Modeling – Current

Role: Researcher | AI & Subsurface Modeling Specialist

Industry: Energy | Digital Transformation | AI in Geoscience

2025

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

Mining Engineer – Open Pit Iron Ore Operation (4 Years Experience)

- Contributed to **mine planning activities** for open pit iron ore production.
- Coordinated drilling, and hauling operations to support **production**.
- Monitored **operational performance** against short-term plans.
- Assisted in **optimizing equipment allocation** to improve efficiency.
- Supported **slope monitoring** and **operational safety** compliance initiatives.

Numerical Modeling & Engineering Simulation

Role: Engineering Research Specialist

Industry: Infrastructure | Mining | Environmental Systems

Politecnico di Torino, Italy

2018 – 2021

- Simulated **underground ventilation systems** using numerical modeling.
- Optimized environmental and safety 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

Mine Engineering & Planning

Open Pit Mine Planning | Production Optimization | Haulage Systems | Slope Stability Considerations | Life-of-Mine Concepts

Underground Mining Knowledge

Ventilation Systems | Ground Control Principles | Fire Safety Modeling | Environmental & Safety Risk Assessment

Technical & Analytical Tools

Numerical Modeling | Python | Data Analytics | Simulation-Based Optimization | Engineering Reporting

Leadership & Compliance

Safety-Focused Engineering | Multidisciplinary Collaboration | Technical Documentation | Regulatory Awareness

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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

PROFESSIONAL PROFILE & DIFFERENTIATION

International Experience

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

Technical Leadership & Impact

- Strong exposure to both **open pit and underground mining** systems.
- Familiarity with **mine planning concepts** from short-term scheduling to life-of-mine strategy.
- Analytical mindset with ability to integrate digital tools into **mine optimization**.

Strategic Focus

Brings **digital transformation** capability to traditional mining engineering practices.