

EDUCATION

Kharazmi University, Faculty of Earth Sciences

Tehran, Iran

Bachelor of Science, Geology

2021 – 2025

- Chairperson, Geological Society of Kharazmi University (June 2024 – Present)
- Vice President of Media, Geological Society of Kharazmi University (November 2023 – June 2024)
- Ranked 8th out of 60 students in the Undergraduate Studies

University of Lille, International Academy Lille Hdf

Lille, France

Water Resource Management (Hydro 2024) Summer School

2024

- Completed 5 ECTS credits in water resource management topics.
- Presented an oral defense on numerical groundwater modeling, focusing on changing water abstraction in the Weyib Watershed, Ethiopia.

University of Tabriz

Tabriz, Iran

The 2nd Summer School of Geology

2023

- Conducted field studies and geological mapping at Aras Geopark
- Developed essential fieldwork skills, including rock sampling, stratigraphic logging, and structural analysis

TEACHING & WORK EXPERIENCE

Kharazmi University

Tehran, Iran

Teaching Assistant

April 2025 – Present

- Programming Course, Under Supervision of Dr. Morteza Asemani

FEZtool

Tehran, Iran

Co-Founder & Research and Development Specialist

August 2023 – Present

- Developed advanced algorithms to support research and analytical processes
- Conducted in-depth geospatial data analysis for environmental and spatial insights
- Led research initiatives in Earth sciences to drive innovation and scientific understanding

NovaVira

Tehran, Iran

Board Member

June 2023 – November 2024

- Worked closely with the team to shape the company's vision, supporting the development of innovative CRM solutions and fostering a culture of growth

Young Scholars Club

Tehran, Iran

Instructor

July 2024

- Taught "Applied Data Science in Geology for" the Iran National IESO¹ 2024 Team

Kharazmi University

Tehran, Iran

Instructor

April 2024 – June 2024

- Organized and instructed the Advanced Python and Machine Learning Workshop

ARYANIC

Tehran, Iran

Project Manager

November 2022 – June 2023

- Worked on a project called "Business Factory" and managed a team of 7

GreenOly

Tehran, Iran

Product Manager

August 2022 – January 2023

- Created an Entrepreneurship MOOC with over 15 Olympiad Medalists.

Olgoo Publication

Tehran, Iran

Proofreader

December 2021 – February 2022

- Worked as a proofreader to Edit Geology books for University Entrance Examss

NODET²

Tehran, Iran

Teacher

May 2021 – September 2021

- Taught ITEO³ Marketing at Allameh Helli (Branches 5 & 8) and Farzanegan High Schools

¹International Earth Science Olympiad

²National Organization for Development of Exceptional Talents

³Iranian Thinking & Entrepreneurship Olympiad

The 3rd National Festival of Young Iranian Geologists

Graphics Committee Member

Tehran, Iran

May 2024 – June 2024

Imam Khomeini International University

Editorial Board Member

Qazvin, Iran

September 2023 – June 2024

BABAEER

Talent Acquisition Specialist

Tehran, Iran

July 2022 – March 2024

PUBLICATIONSSSSSSS

Journal Articles

1. **Farmahini Farahani, M.** (2024). Effects and social damage of fine dust. *Ovan Scientific Journal*
2. **Farmahini Farahani, M.** (2024). Designing the green belt in the southwest of Zahedan. *Ovan Scientific Journal*
3. Saravani, M. J., Kashef, S., **Farmahini Farahani, M.**, Kashefi, M., & Zohreh, M. (2023). Investigating the accuracy of hybrid models with wavelet transform in the forecast of watershed runoff. *Journal of Water Management Modeling (JWMM)*

Conference Papers

1. Rezaei, K., & **Farmahini Farahani, M.** (2024, March). Visualization of magnetometric data with Python (case study: Segregation sedimentary units of Torud Playa). In *The 1st Conference on Applied Geophysics in Mines*, Tehran, Iran
2. Rezaei, K., & **Farmahini Farahani, M.** (2024, February). Comparing the performance of the k-means clustering method and spectral indices in characterizing land use and land cover using remote sensing with Python (case study: Landsat 8 multi-spectral images). In *2nd International Conference for Iranian Geography and Earth Sciences Students*, Tehran, Iran
3. **Farmahini Farahani, M.**, Rezaei, K., Karamollahi, S., & Moghadam, F. J. (2024, January). Application of PCA algorithm in remote sensing using Python programming language (case study: Landsat 9 multispectral images). In *8th Symposium of Sedimentological Society of Iran*, Hormozgan, Iran
4. Rezaei, K., & **Farmahini Farahani, M.** (2023, September). The importance of using Python programming language in Earth science. In *26th Conference of Geological Society of Iran*, Urmia, Iran

Books

1. Rezaei, K., **Farmahini Farahani, M.**, Karimzadehasl, E. (Trans.). (2024). *Introduction to Python in Earth science data analysis: From descriptive statistics to machine learning*. **Tasir Publication**. (Original work published by Maurizio Petrelli)
2. Karimi Pashaki, A., **Farmahini Farahani, M.**, Soleimani, J., & Karimzadegan, Y. (2023). *Environmental risk management*. **Azargan Publication**

PROJECTS

FEZrs (Open Source) | pypi.org/project/fezrs

2023 – Present

- Advanced Python library for remote sensing, developed by FEZtool

FEZClient (Open Source) | github.com/FEZtool-team/FEZClient

2024 – 2025

- Graphical user interface (GUI) to support and extend the FEZTool ecosystem

Awesome Geophysics | aradfarahani.com/awesome-geophysics

2025

- Community-curated essential geophysics datasets and open-source tools for researchers

Goelectricspy (Open Source) | github.com/aradfarahani/Goelectricspy

2023

- Interactive 3D visualization tool for subsurface resistivity using geoelectrics survey data

LICENSES & CERTIFICATIONS

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| International Data Masterclass, United Nations Big Data | 2024 |
| Application of Remote Sensing in Geology, Zawinas | |
| Investigating practical issues in the exploration of Sulphide Deposits using the IP-RS method, (NIGS) ¹ | |
| AI and Climate Change, DeepLearning.AI (Offred by Coursera) | 2023 |
| Global Environmental Management, DTU ² (Offred by Coursera) | |
| Remote Pilot Certification (Multirotor), CAAIRI ³ | |
| Unmanned Aerial Vehicle Surveying, Maan Academy | |
| GIS, Mapping, and Spatial Analysis Specialization, University of Toronto (Offred by Coursera) | |
| Hydraulic Modeling of flood plains in Urban Rivers, Kharazmi University | 2022 |
| CS50 Certificate, CS50 (Harvard University) | 2021 |
| Introduction to Data Analytics, IBM (Offred by Coursera) | |

HONORS & AWARDS

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| LeetCode Global Ranking - <i>Ranked Top 100</i> , LeetCode | 2025 |
| Deep-ML Global Leaderboard - <i>Ranked Top 10</i> , Deep-ML.com | |
| Hydro 2024 Research-Oriented Summer School - <i>Full Scholarship</i> , University of Lille | 2024 |
| Master's Entrance Exam (Geophysics) - <i>Ranked 11th Nationwide</i> | |
| Geological Society Logo Design Contest - <i>Winner</i> , Kharazmi University | |
| Research Visit Grant (2500 DKK) - <i>Awardee</i> , University of Copenhagen | 2022 |
| DrCT 2021 Global Computational Competition - <i>Gold Medalist</i> | 2021 |
| 1 st national Thinking & Entrepreneurship Olympiad (ITEO) - <i>Silver Medalist</i> | 2020 |
| WMI 2015 World Mathematical Championships Selection - <i>Silver Medalist</i> | 2015 |

SKILLS & INTERESTS

Programming Languages: Python (ObsPy, pyGIMLi, XGBoost, OpenCV, TensorFlow, NumPy, PyGMT, Xarray, Pandas, Scikit-learn, Matplotlib, Plotly, kepler.gl, Leafmap, Folium, Seaborn, Rasterio, GeoPandas), Julia, Bash (Shell scripting); Familiar with R

Markup Languages: Markdown, L^AT_EX

Software: ENVI, Global Mapper, ArcGIS, QGIS, Canva, Agisoft Metashape, Blender, 3ds Max, Google Earth Pro, Datamine, SAS.Planet, CorelDRAW, Groundwater Vistas

Field Techniques: Drone Surveying, Geoelectrical Methods (Induced Polarization–Resistivity Sounding, IP-RS)

Languages: Farsi (Persian): *Native*; English: *Fluent (C1)*

Research Interests: Seismic Data Processing, Applied Geophysics, Remote Sensing, Hydrogeophysics, Machine Learning, Image Processing, Open-Source Software Development

PROFESSIONAL MEMBERSHIPS

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| Google Maps Platform Innovators | Member, 2025 – Present |
| Young Scholars Club | Member, 2020 – Present |
| Geological Society of Iran | Student member, 2021 – 2022 |

¹National Iranian Geophysical Society

²Technical University of Denmark

³Civil Aviation Authority of Islamic Republic of Iran