

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

Supplementary Education

University of Lille, International Academy Lille Hdf

Lille, France

Water Resource Management (Hydro 2024) Summer School

Summer 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

Summer 2023

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

TEACHING EXPERIENCE

Kharazmi University

Tehran, Iran

Teaching Assistant

April 2025 – Present

- Programming Course, Under Supervision of Dr. Morteza Asemani

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

NODET²

Tehran, Iran

Teacher

May 2021 – September 2021

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

WORK EXPERIENCE

FEZtool

Tehran, Iran

Co-Founder & Research and Development Specialist

August 2023 – Present

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

NovaVira

Tehran, Iran

Board Member

June 2023 – November 2024

- Collaborated on company vision and CRM development to drive growth

ARYANIC

Tehran, Iran

Project Manager

November 2022 – June 2023

- Managed a project titled "Business Factory", leading 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 Exams

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

BABAEIE
Talent Acquisition Specialist

Tehran, Iran
July 2022 – March 2024

PUBLICATIONS

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

¹International Earth Science Olympiad

²National Organization for Development of Exceptional Talents

³Iranian Thinking & Entrepreneurship Olympiad

- 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 goelectrics survey data

LICENSES & CERTIFICATIONS

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, DTU² (Offred by Coursera)

Remote Pilot Certification (Multirotor), CAAIRI³

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

LeetCode Global Ranking - Ranked Top 100, LeetCode 2025

Deep-ML Global Leaderboard - Ranked Top 50, Deep-ML.com

Hydro 2024 Research-Oriented Summer School - Full Scholarship, University of Lille 2024

Master's Entrance Exam (Geophysics) - Ranked 11th Nationwide

Geological Society Logo Design Contest - Winner, Kharazmi University

Research Visit Grant (2500 DKK) - Awardee, University of Copenhagen 2022

DrCT 2021 Global Computational Competition - Gold Medalist 2021

1st national Thinking & Entrepreneurship Olympiad (ITEO) - Silver Medalist 2020

WMI 2015 World Mathematical Championships Selection - Silver Medalist 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), SQL (MySQL); 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

¹National Iranian Geophysical Society

²Technical University of Denmark

³Civil Aviation Authority of Islamic Republic of Iran

PROFESSIONAL MEMBERSHIPS

Google Maps Platform Innovators

Member, 2025 – Present

Young Scholars Club

Member, 2020 – Present

Geological Society of Iran

Student member, 2021 – 2022