

## EDUCATION

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### 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 8<sup>th</sup> 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 2<sup>nd</sup> 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

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### Kharazmi University

Tehran, Iran

*Teaching Assistant*

April 2025 - current

- Programming Course, Under Supervision of Dr. Morteza Asemani

### FEZtool

Tehran, Iran

*Co-Founder & Research and Development Specialist*

August 2023 - current

- 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

### Young Scholars Club (YSC)

Tehran, Iran

*Instructor*

July 2024

- Teaching Data Science for the Iran National IESO 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 Olympiad Medalists.

## COMMUNITY SERVICE

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### The 3<sup>rd</sup> National Festival of Young Iranian Geologist

Tehran, Iran

*Graphics Committee Member*

May 2024 - June 2024

### Imam Khomeini International University

Qazvin, Iran

*Editorial Board Member*

September 2023 - June 2024

## PUBLICATIONS

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### 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., Kashef, 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 1<sup>st</sup> 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 *2<sup>nd</sup> 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 *8<sup>th</sup> 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 *26<sup>th</sup> 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

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Awesome Geophysics | [aradfarahani.com/awesome-geophysics](https://aradfarahani.com/awesome-geophysics) 2025

- Community-curated resource offering essential tools, datasets, and educational materials for geophysical exploration.

FEZrs | [pypi.org/project/fezrs](https://pypi.org/project/fezrs) 2023 - current

- Advanced Python library for remote sensing, developed by FEZtool
- Provides tools for image processing, feature extraction, and geospatial data analysis
- Designed for satellite imagery analysis and remote sensing applications
- Easily integrates with FastAPI for web-based geospatial processing

Goelectricspy | [github.com/aradfarahani/Goelectricspy](https://github.com/aradfarahani/Goelectricspy) 2023

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

## HONORS & AWARDS

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LeetCode Global Ranking — Ranked Top 100, LeetCode 2025

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

## SKILLS & INTERESTS

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**Programming Language:** Python, Julia, Shell scripting (Bash), Familiar with R

**Markup Language:** Markdown, L<sup>A</sup>T<sub>E</sub>X

**Software:** ENVI, Global Mapper, ArcGIS, QGIS, Canva, Agisoft Metashape, Blender, 3dsMax, Google Earth Pro, Datamine, SAS.Planet, Corel Draw, Groundwater Vistas

**Fieldwork Skills:** Drone Surveying, Geoelectrics (IP-RS)

**Language:** Farsi (Persian): *Native* , English: *Fluent (C1)*

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