

# Alejandro Maldonado Medina

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Morelia, Mich. • alejamm28@gmail.com • (+52) 4433008259 • [www.linkedin.com/in/alejandro-maldonado-medina](https://www.linkedin.com/in/alejandro-maldonado-medina)

## Professional summary

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Graduate in Geosciences from UNAM with a specialization in Applied Geophysics. My undergraduate thesis focused on a 3D electrical resistivity tomography study of the central courtyard of the Palacio de Minería in Mexico City, providing valuable insights into the building's structural stability and its differential subsidence. I have a strong interest in geophysical exploration for urban and archaeological settings, as well as applications in the energy sector, particularly in the development and sustainable use of geothermal energy. I complement my academic background with studies in data science, focused on data analysis, visualization, and database management using Python and SQL. I apply these skills in interdisciplinary projects that integrate diverse approaches to solve complex problems through data-driven solutions.

## Education

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### Escuela Nacional de Estudios Superiores Unidad Morelia. UNAM.

Bachelor's degree in Geosciences with the área of Applied Geophysics August 2019 – June 2023  
Bachelor's thesis: Tomografía de resistividad eléctrica 3D en el palacio de Minería, Ciudad de México

### Bachillerato Gestalt

Chemical-biological baccalaurate August 2016 – June 2019

## Professional experience

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### Institute of Geophysics, Michoacan Unit

#### Intern/Social service

March 2022 – September 2022

Creation of an interactive map as part of the P02 project, which consisted of a map of geothermal regions in Mexico based on fluid geochemistry and aquifer distribution through the digitalization of databases to a web page.

### Seven Days Gold Altozano

#### Swimming instructor

July 2023 – Present

Teach individual and group classes to children from 3 years old and adults.

## Courses, certifications and volunteering

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- **Fiesta de la Ciencias y las humanidades** October 2019  
UNAM Campus Morelia. Expositor del "Calendario Cósmico".
- **Basic level seismic data analysis for Institute of Geophysics, UNAM** January 2023  
To verify this certification, please consult: <https://sigeco.cuaieed.unam.mx/valida.php> entity: IGEF and the folio number : 1429
- **Advanced level seismic data analysis for Institute of Geophysics, UNAM** January 2023  
To verify this certification, please consult: <https://sigeco.cuaieed.unam.mx/valida.php> entity: IGEF and the folio number : 1370
- **Segundo Encuentro de Estudiantes de Geociencias** May, 2023  
UNAM Campus Morelia. Organizing Committee. Scientific Poster Presenter
- **Analyze Data with Python Skill Path** April 2025  
Data analysis course with statistics using Python and libraries such as Matplotlib, NumPy, and SciPy.

To verify this certification, visit:

<https://www.codecademy.com/profiles/alejamm28/certificates/a91cf883da2f48e2b977577646801c81>

- **How to Clean Data with Python**

May 2025

Course to learn the basics of regular expressions and how to extract and clean data from the web with Python.

To verify this certification, visit:

<https://www.codecademy.com/profiles/alejamm28/certificates/e773a003314c1be60da8388a90a77e78>

- **Data Science Foundations**

May 2025

Course to clean, analyze, and visualize data with Python and SQL

To verify this certification, visit:

<https://www.codecademy.com/profiles/alejamm28/certificates/738a7262ff2b4a49b062c25482dc2549>

- **Data Scientist: Machine Learning**

In progress

Data Science programming course in Machine Learning to build models and generate meaning from data on the Codecademy platform.

## Technical skills

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**Competencies:** Data analysis, reading and interpretation of scientific articles in English, fieldwork, handling and use of geophysical equipment and techniques, interpretation of geophysical data, creation of 2D and 3D models, management of GIS, custom graphics with matplotlib and seaborn, linear regression, logistic regression, correlation analysis, handling of categorical variables (one-hot encoding), model evaluation (accuracy, precision, recall, F1-score), cleaning, transformation and scaling of variables (StandardScaler, MinMaxScaler).

**Soft skills:** Interdisciplinary teamwork, assertive communication, problem-solving, empathy, organization, leadership, adaptability, flexibility, initiative, critical and analytical thinking.

**Idioms:** Spanish (Native), English (advanced C1), Italian (basic A1).

**Software:** SEISAN earthquake analysis software, EarthImager 2D, EarthImager3D, OasisMontaj, Python, NumPy, Pandas, matplotlib, seaborn, scikit-learn, SQL, Jupyter Notebooks, Google Colab ArcGIS, QGIS, Microsoft Office, Google Drive, Google Earth Pro.