

Danilo Chamorro Riascos

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PROFESSIONAL SUMMARY

Driven M.Sc. candidate in Earth Sciences and Engineering at King Abdullah University with a focus on Machine Learning. Solid grounding in Geological Engineering from Universidad Nacional de Colombia. Proven experience in geophysical services and data analysis, eager to contribute to innovative projects in a growth-oriented organization utilizing expertise in machine learning, data science, and geosciences.

EDUCATION

King Abdullah University of Science and Technology

2022 - Present

M.Sc. in Earth Sciences and Engineering with track in Machine Learning

Thuwal, KSA

- Academic advisor: Matteo Ravasi
- GPA: 3.76/4
- Career percentage: 85%.

Universidad Nacional de Colombia

07, 2022

B.S. with Major in Geological Engineering

Medellín, CO

- Honours: Summa cum laude | GPA: 4.4/5.0.

CERTIFICATIONS

Yale

08, 2020

Financial Markets

- 6 weeks course. Offered through Coursera.
- Certified with honors.

ESRI

06, 2019

Cartography

- 6 weeks course. Offered through Esri Training.

COMPLEMENTARY EDUCATION

IRIS

06, 2020 – 08, 2020

Seismology Skill Building Workshop for Undergraduates

Offered virtually

- Learning about data science applied to seismology, application to real contexts. Proficiency in handling large volumes of seismic information.

PIERIAN DATA

2020

Complete Python Bootcamp

Offered virtually

- Learning about advanced Python usage.

KAUST-Iraya Energies

06, 2021

Virtual Summer School: Utilizing unstructured data in geoscience

Offered virtually

- Learning about Machine Learning for Natural Language Processing (NLP).

Imperial College London

06, 2021

GUIs for Python - improving the accessibility of research software

Offered virtually

- Learning about Graphical User Interfaces (GUI) and applications to research software.

ACADEMIC RESEARCH

King Abdullah University of Science and Technology (KAUST)

02, 2023 – Present

M.Sc. Student on Earth Sciences and Machine Learning

Thumal, KSA

- Investigated the application of elastography techniques for near surface imaging at offshore wind farms, under the guidance of Professors Matteo Ravasi (KAUST), Koen van Dongen (Delft) and Johannes Singer (Fugro).

King Abdullah University of Science and Technology (KAUST)

02, 2022 – 07, 2022

Visiting Research Student on Earth Sciences and Machine Learning

Thumal, KSA

- Engaged in the application of convolutional neural networks for determining dispersion curves in MASW method surveys under the guidance of Professor Matteo Ravasi (KAUST) and Myrna Staring (Fugro).

Universidad Nacional de Colombia

03, 2020 – 10, 2020

Seismology and Python applied to seismic research

Medellín, CO

- Investigated the implications of recent earthquakes on Andean geodynamics using receiver functions, under Professor Gaspar Monsalve guidance.

Universidad Nacional de Colombia

09, 2020 – 07, 2022

Bachelor thesis project

Medellín, CO

- Conducted research on the geoelectrical characterization of a slope to analyze changes in saturation over different time periods, under the guidance of Professor Gaspar Monsalve.

ACADEMICAL EXPERIENCE

Universidad Nacional de Colombia

03, 2019 – 04, 2020

Multivariable Calculus teaching assistant

Medellín, CO

- 20 hr/week hourly dedication.

Universidad Nacional de Colombia

08, 2017 – 11, 2018

Mineralogy teaching assistant

Medellín, CO

- 6 hr/week hourly dedication.

PUBLICATIONS

- Chamorro, D., Zhao, J., Birnie, C., Staring, M., Flidner, M., & Ravasi, M. (2022). Extracting Surface Wave Dispersion Curves with Deep Learning. Second EAGE Subsurface Intelligence Workshop, 1–5.
<https://doi.org/10.3997/2214-4609.2022616016>
- Chamorro, D., Zhao, J., Birnie, C., Staring, M., Moritz, F., & Ravasi, M. (2023). Deep Learning-based extraction of surface wave dispersion curves from seismic shot gathers (arXiv:2305.13990). arXiv.
<http://arxiv.org/abs/2305.13990>

PROFESSIONAL EXPERIENCE

Ecopetrol S.A.

06, 2021 – 01, 2022

Intern in Exploration and Geophysical Services

Bogotá, CO

- Dedicated 48 hours weekly towards the application of the MASW technique in oil exploration, significantly enhancing the understanding of subsurface structures using ProMAX and skimage software.

GEMMA

03, 2021 – 12, 2021

Research Intern.

Medellín, CO

- Committed 20 hours weekly on research tasks, contributing to the advancement of geophysical studies and methodologies.

AGG – Applied Geology and Geophysics

08, 2021 – 02, 2022

Assistant geophysicist.

Remote

- Engaged in 48-hour weekly tasks of processing and inverting geoelectric and seismic data which included resistivity, induced potential, and electromagnetism measurements.
- Spearheaded the analysis and interpretation of data quality, leveraging Python for optimized outcomes.

SKILLS & INTERESTS

▪ Technical Skills:

- Programming: Python (Matplotlib, Scipy, Pytorch, Obspy)
- Software: ProMAX, skimage, Adobe Suite, ArcGIS, QGIS
- Data Analysis: Fourier Transform Analysis, Machine Learning, Natural Language Processing (NLP)
- Seismology: Geoelectrical, Seismic Refraction, Surface Wave analysis

Soft Skills:

Task Management, Proactivity, Responsibility, Creativity in Problem Solving

- **Interests:** Geophysics, seismology, data science, project management.

ACHIEVEMENTS

- First place winner of EAGE 2022 Hackaton on Explainable A.I.
- Honours degree obtained in bachelor studies.
- Presenter at Second EAGE Subsurface Intelligence Workshop in Manama, Bahrein.
- 2023 Chevron/SEG Student Leadership Symposium recipient

PROFESSIONAL MEMBERSHIPS

- Student member, European Association of Geoscientists and Engineers (EAGE)
- Student member, Society of Exploration Geophysicists (SEG)