

Melanie Peña Torres

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Descripción

Electrical Civil Engineering graduate with a major in Computational Intelligence and current Master's student in Data Science at the University of Chile. Proactive and detail-oriented, with strong leadership and teamwork skills. Experienced in Machine Learning, Deep Learning, and Big Data, with a special interest in applied research. Skilled in designing, implementing, and optimizing data pipelines and models, as well as teaching advanced courses in AI and Data Science.

Experiencia Profesional

Junior Data Engineer

Aug. 2024 – Present

NeoSoft SPA

- Design, implementation, and maintenance of internal data pipelines using Python and SQL.
- Development and optimization of data automation and integration workflows with Apache NiFi, enhancing infrastructure efficiency and scalability.

Undergraduate Intern

Jan. 2024 – Feb. 2024

Inria Chile

- Development and implementation of Topological Autoencoders for genomic data analysis of plankton communities.
- Tasks included preprocessing, feature selection, training, validation, and results analysis for climate change-related scientific research.

Undergraduate Intern

Dec. 2022 – Jan. 2023

FABLAB – University of Chile

- Design and optimization of electrical circuits and PCBs for mining research machinery (Short Impact Load Cell – SLC).
- Implementation of sensors, filters, voltage regulators, and laboratory experimental testing.

Experiencia Docente

Adjunct Instructor

University of Chile •

Design and evaluation of activities, recitations, and final projects in advanced courses on Data Science, Databases, and Generative AI.

2024–Present

- **IN6533 – Fundamentals of Generative AI**
Transformers, Diffusion, GANs; Text/image/code generation; Technical and ethical evaluation.
- **MDS7103 – Databases**
ER modeling, SQL query optimization, and management of relational and NoSQL databases.
- **MDS7202 – Scientific Programming Lab for Data Science**
Python, data visualization, Machine Learning, Git, Docker, Airflow, Pandas, Scikit-learn, XGBoost, LightGBM.

Teaching Assistant

University of Chile •

Grading, laboratory support, and technical guidance in courses on scientific programming, electronics, and telecommunications.

2023–2025

- **EL3202 – Analog Electrical Circuits**
Analysis, design, and optimization with semiconductors and amplifiers.
- **EL5208 – Laboratory of Receivers, Antennas, and Signals**
Measurement and characterization of antenna, radar, and optical systems.
- **MDS7103 – Databases**
- **MDS7202 – Scientific Programming Lab for Data Science**

Educación

University of Chile

2019 – Present

- B.Sc. in Electrical Civil Engineering – *Completed*
- M.Sc. in Data Science – *In progress*

Distinciones y Actividades

Poster Presentation

2024

ChileWIC – Visualization of epidemiological patterns in urban areas using georeferenced pharmaceutical data

Data Engineering Bootcamp

2024

QuantumBlack, AI by McKinsey • DE.ELLAS – Women in Data Engineering

Outstanding Student Award

2023

University of Chile

Tecnologías

Programming Languages: Python, SQL, Bash

Data Science: Pandas, NumPy, Scikit-learn, PyTorch, TensorFlow, XGBoost, LightGBM, SHAP

Big Data: Apache Spark, Apache NiFi, Docker, Git, GitHub

Databases: MongoDB, Redis, MariaDB

Electronics: Circuit Design, PCB Design, Arduino

Other: Jupyter, Ubuntu, Windows, VSCode, JetBrains

Languages: Spanish (Native), English (C1 – TOEFL ITP)