

PABLO NEIRZ VERGARA

SENIOR DATA SCIENCE ENGINEER

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PROFESSIONAL SUMMARY

Senior Data Scientist with more than 8 years of experience in Python, machine learning, natural language processing (NLP), computer vision, and big data analytics. Specialized in optimizing e-commerce operations and forecasting with state-of-the-art models such as TFT, NHITS, NBEATS and LightGBM, consistently achieving forecast accuracy above 90%. Expert in translating complex insights for interdisciplinary teams, with publications in high-impact journals, 2nd place worldwide in datasource.ai (2020), keynote speaker at events such as FLISOL and interviewed in ProinChile's podcast on Spotify. Strong background in NLP techniques, including semantic distances between concepts (e.g., embeddings and conceptual similarity), Promptengineering with the use of rules and MCP, pattern detection, and computer vision (e.g., image segmentation, OCR, object detection)

EDUCACIÓN

PHD IN COMPUTER ENGINEERING (ONGOING)

Universidad Técnica Federico Santa María, 2022 – Present

MASTER'S DEGREE IN NEUROSCIENCE

Universidad de Oviedo / Autónoma de Chile, 2020 – 2022

MASTER'S DEGREE IN MANAGEMENT AND MANAGEMENT DEVELOPMENT

Universidad de Nebrija, 2020 – 2021

MASTER IN BIG DATA

Cerem Global Business School, 2018 – 2020

BACHELOR OF SCIENCE IN PHYSICS

Universidad de Concepción, 2011 – 2017

PROFESSIONAL EXPERIENCE

MERCADOLIBRE | SENIOR DATA SCIENCE ENGINEER

Santiago, Chile, December 2023 – Current

- I developed advanced machine learning models to optimize e-commerce operations, improving the accuracy of inventory and sales forecasts, using state-of-the-art models such as TFT, NHITS, NBEATS, and LightGBM.
- Collaborated with international teams to define priority air cargo strategies, and development of priority models, achieving forecast accuracies consistently above 90% increasing logistics efficiency by 20%.
- Developed and implemented a machine learning assembly model for time series, adopted by multiple teams, that outperformed Meta's Prophet model by up to 10 percentage points in forecast accuracy, significantly improving data-driven decision-making.

TOTTUS | SENIOR DATA SCIENTIST

Santiago, Chile, April 2022 – December 2023

- Led the development of predictive models for sales of domestic and imported products, improving accuracy in promotions, coupons, and distribution in stores, with errors less than 5% of MAPE.
- I led the Catman forecasting team, delivering analytical solutions that optimized product placement and sales strategies, in latest sales centers in Peru.
- Presented actionable insights to stakeholders, connecting technical and business teams.

SOOFT TECHNOLOGY | SENIOR DATA SCIENTIST (CONSULTANT FOR SAS)

Santiago, Chile, March 2022 – May 2022

- Monitored and validated credit risk models, preparing detailed performance reports.
- Developed customer prospecting models, improving acquisition strategies.

CAPITARIA | DATA SCIENTIST

Santiago, Chile, November 2020 – March 2022

- I built a qualitative model to analyze the company's operations, identifying growth opportunities and creating KPIs to monitor the performance of executives.
- Led research on customer behavior, delivering hyper-personalized dashboards that reduced customer churn by 30% and increased profitability.
- I wrote two articles for the company's official blog, explaining key findings in an accessible way [[Link](#)].

MINISTRY OF TRANSPORT AND TELECOMMUNICATIONS, CHILE | DATA SCIENTIST

Santiago, Chile, November 2020 – March 2022

- I led the technical counterpart in public tenders, including the project "Logistics Barometer of Foreign Trade 2020" [[Link](#)].
- I developed port load prediction models with a mean square error of less than 1%, delivered directly to the Undersecretary of Transportation.

AVLA | DATA SCIENTIST

Santiago, Chile, March 2019 – July 2020

- I led the analytics area for Chile and Peru on an interim basis, reorganizing teams after the impact of COVID with agile methodologies.
- I developed scrapers for public market data and used data from the transparency law to create a bid alert system, achieving a competitive advantage of several months.
- OCR Development to Break Captchas
- Development of NLP models to detect patterns in the public market.

MEDICAL IMAGE ANALYSIS, UDEC | RESEARCHER

Concepción, Chile, March 2018 – December 2019

- Brain Connectivity Analysis using Functional Magnetic Resonance Imaging and Tractography (FONDECYT ACT 1161427)
- Development of an Ant Colony Algorithm for Image Edge Detection, used for segmentation of artifacts in brain MRIs.

APPLIED PHYSICS LABORATORY, UDEC | RESEARCH ASSISTANT

Concepción, Chile, March 2015 – March 2016

- I developed predictive models for the compressive strength of concrete using optimized multilayer perceptrons with grid search.
- I analyzed heavy metals in drinking water using X-ray fluorescence techniques.

NOTABLE ACHIEVEMENTS

PUBLICATIONS

ATTRIBUTE RELEVANCE SCORE: A NOVEL MEASURE FOR IDENTIFYING ATTRIBUTE IMPORTANCE
MDPI, Algorithms, 2024, [DOI: [10.3390/a17110518](https://doi.org/10.3390/a17110518)]

PREDICTION OF CONCRETE COMPRESSIVE STRENGTH THROUGH ARTIFICIAL NEURAL NETWORKS
Gradjevinar, 2020, [DOI: [10.14256/JCE.2438.2018](https://doi.org/10.14256/JCE.2438.2018)]

GUIDE: NON-LINEAR FEATURES GENERATION WITH GPLEARN
Kaggle (Bronze Medal), [[Link](#)]

DOUBLE MASTER'S THESIS: DETECTION OF DYSLEXIA BY CONVOLUTIONAL NEURAL NETWORKS
University of Oviedo / Autónoma de Chile, 2022

TOURNAMENTS

1.er Place: Financial Inclusion in Latam, datasource.ai

3.er Place: Apartment Price Prediction in Argentina and Colombia, datasource.ai

11th Place: Flight Delay Prediction Competition, datasource.ai

Top 25%: AI Agents - Rock, Paper, Scissors, Kaggle

ADDITIONAL CERTIFICATIONS

- **SAS Essentials**, SAS, 2022
- **Advanced Growth Strategies**, Reforge, 2022
- **Behavioral Finance**, Duke University (Coursera), 2021
- **Technical Analysis and Trading Strategy**, Andia Academy, 2021
- **Growth Hacking**, SENCE, 2020
- **Big Data Visualization**, SENCE, 2020
- **Workshop TensorFlow**, Metric Learning, 2019
- **Project Management with Agile Methodologies**, SENCE, 2019
- **SQL Fundamentals**, SoloLearn, 2018
- **Basic Concepts of Strategic Planning**, Universidad Andrés Bello, 2018
- **Medical Image Analysis**, University of Concepción, 2018
- **Data Structures and Algorithm Analysis**, Universidad de Concepción, 2018 ENH

TECHNICAL SKILLS

PROGRAMMING & TOOLS

Python (NumPy, Pandas, Polars, Dask, Ibis, Scikit-learn, MLforecast, Sktime, GPlern, Plotly, TA-Lib, Seaborn, Matplotlib, TensorFlow, Optuna, LightGBM, XGBoost, CatBoost), SQL, GCP (BigQuery, Labs), HTML, Figma, Jira, Cursor, Jupyter Labs

DOMAINS

Machine Learning, Deep Learning, Big Data, Statistical Analysis, Neuroscience, Consumer Behavior, Forecasting, Agile Methodologies, NPL, Computer Vision, Medical Image Analysis