

Cristóbal Alcázar

MACHINE LEARNING · GENERATIVE AI

Santiago, Chile

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Work Experience

Vendie

Santiago, Chile

COFOUNDER

Oct. 2023 - Today

- Vendie is an AI end-to-end e-commerce solution through WhatsApp.
- LLM framework with support for OpenAI, AWS Bedrock, GCP Vertex and Anthropic APIs.
- AI multi-agent solution with function calling and structured outputs for the company's e-commerce application.

European Southern Observatory - Paranal Observatory

Paranal, Chile

MACHINE LEARNING ENGINEER (GRADUATE INTERNSHIP) - SOFTWARE GROUP

Aug. 2023 - Jan. 2024

- Engineered a RESTful API to streamline access to diverse data sources in the observatory, including Jira tickets and software version control logs, fostering enhanced accessibility and integration of user information across various platforms.
- Devised and implemented a reporting tool application using Streamlit Python's library, featuring customizable summarization levels tailored to user perspectives through utilizing Large Language Models (LLMs).
- Spearheaded prototyping initiatives utilizing vector databases focusing on OpenSearch and the Retrieval Augmented Generation (RAG) pattern. Contributed to developing projects showcasing applications such as similarity search, chatbots, and Q&A apps.

Compraquí - BancoEstado subsidiary

Santiago, Chile

MANAGER PAYOPS AND ANALYTICS

Oct. 2020 - May. 2021

- Oversight of the complete payment process for merchants, leading a team of four analysts to ensure a seamless end-to-end payment workflow.
- Create and lead the analytics teams to provide data and insights to different company areas and the management team, facilitating informed decision-making for the business. Push forward initiatives to train people and evangelize the company using scripting languages like Python and R for analytics and developing a data products mindset.
- Designed, developed and documented the critical processes within the Payops and Analytics area in the company's early stage.

PAYOPS AND RISK FRAUD LEAD

Oct. 2019 - Oct. 2020

- Led the Payops and RiskFraud team in processing payments for over 50k merchants nationwide, focusing on minimizing fraud and preventing service misuse in the card payment network.
- Developed various data products, including reports and dashboards, utilizing code to automate data extraction, preprocessing, and presentation.
- Implemented the risk and fraud process, creating features based on transaction details like transaction amount, deviation from average tickets by merchant category, and transaction frequency. Developed an outlier detection model to calculate a transaction score.

Central Bank of Chile

Santiago, Chile

ECONOMIC FINANCIAL ANALYST - MACROECONOMIC STATISTIC DIVISION

Oct. 2016 - Oct. 2019

- Responsible for deploying and maintaining the statistical data process to elaborate the local fixed-income quarterly publications. Includes processing multiple data sources using technologies such as SQL, Python, and R. Translating from granular data to macro-financial concepts consistently with other macroeconomic statistics.
- Write technical reports, publish statistics, and make periodic presentations to stakeholders about local fixed-income markets' economic and financial scenarios.
- Implement and publish the *Handbook of Securities Statistics for Chile*, one of the nine Special Data Dissemination Standards (SDDS plus) items, the most advanced standard for economic-financial statistics dissemination worldwide [\[Announcement\]](#)

Research & Teaching Experience

RESEARCH

2024 **Avoiding mode collapse on diffusion models finetuned with reinforcement learning**, Research Assistant worked with [@Felipe Tobar](#) and [@Roberto Barceló](#) [\[arXiv\]](#)

Santiago, Chile

2022 **SegPlantFormer**, An automatic cell plants segmentation from high-resolution microscope images using transformer-based approach. Collaboration with researchers of Worcester Polytechnic Institute (US) [\[GitHub\]](#) [\[Poster\]](#)

Santiago, Chile

TEACHING EXPERIENCE & TALKS

2024	European Southern Observatory , Building LLM-based Systems & Products at Paranal [Slides]	<i>Santiago, Chile</i>
2023	Universidad de Chile - FCFM , Graduate course: Deep Generative Models (Teaching Assistant - Syllabus design)	<i>Santiago, Chile</i>
2023	European Southern Observatory , Talk: Sequence Models with Transformers. A Journey Through Language Models, Current Insights, and Practical Applications at Paranal Observatory (with @Camilo Carvajal). [Slides]	<i>Paranal, Chile</i>
2022/23	Universidad Tecnológica Metropolitana , Diploma course: Modelamiento de datos (Teaching Assistant - Syllabus design)	<i>Santiago, Chile</i>
2021	Women in Data - Guatemala Chapter (NPO) , Data Visualization with Python [Slides] [GitHub] [Recording]	<i>Webinar - Remote</i>
2019	Universidad de Chile - FCFM , Undergraduate course: Data Journalism with Python (Part-time Professor)	<i>Santiago, Chile</i>
2019	Ministry of Social Development and Family , A five-session Data Visualization Workshop using R (Instructor - Syllabus design)	<i>Santiago, Chile</i>
2018	Universidad de Chile - FCEI , Undergraduate course: Data Analysis with R Programming (Part-time Professor)	<i>Santiago, Chile</i>
2018	Universidad de Chile - FCFM , Undergraduate course: Data Journalism with R (Teaching Assistant)	<i>Santiago, Chile</i>

Education

Universidad de Chile

Santiago, Chile

MSC IN DATA SCIENCE

2022 - 2024

- **Thesis:** *Extending Reinforcement Learning Techniques for Diffusion Models*, supervised by [@Felipe Tobar](#) [\[Report\]](#) [\[GitHub\]](#)

Universidad Adolfo Ibañez

Viña del Mar, Chile

B.S. IN BUSINESS ADMINISTRATION, MSC IN FINANCE

2009 - 2015

Skills

Programming	Python scientific stack (numpy, pandas, scipy, matplotlib), PyTorch, JAX, open-source ML ecosystem (HuggingFace, W&B), R (tidyverse, ggplot2), SQL, fastapi, pydantic
Languages	Spanish (native), English
EDX	Introduction to Computer Science and Programming Using Python, Introduction to Computational Thinking and Data Science, Artificial Intelligence (CSMM.101.x), Machine Learning (CSMM.102.x), Robotics (CSMM.103.x)
Coursera	Introduction to Machine Learning in Production, Machine Learning, "Graph Search, Shortest Paths, and Data Structures", "Divide and Conquer, Sorting and Searching, and Randomized Algorithms", The Data Scientist's Toolbox, R Programming, Getting and Cleaning Data, Exploratory Data Analysis, Reproducible Research, Statistical Inference, Regression Models, Managing Big Data with MySQL

Writing

Digital literacy, computational thinking, and literate programming

Lom Ediciones

AUTHOR

Oct. 2019

- A chapter published in the book *"Inteligencia Artificial y Bienestar de las juventudes en America Latina"* ([Brossi, 2019](#)) that reviews and reflects on ideas such as computational thinking and literate programming, particularly highlighting the importance of establishing programming as an elementary skill in Latin America.