

Alberto Domínguez Horner

Machine Learning, Data Engineering, and Causal Reasoning

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🔗 [HornerAlberto](#)

Data Engineer and Causal AI independent researcher. I administer a private repository for data ingestion and data management with Spark in Microsoft Fabric. I am certified as Microsoft Fabric Data Engineer and as Microsoft Fabric Analytics Engineer. For many projects, I have designed the Cloud Data Architecture. I contribute biweekly to the [causalpython.io](#) newsletter.

Industry Experience

Causal Python - Newsletter contributor

2025 - present

- Every two weeks I write on a new Causal AI topic. My [recent contributions](#) include topics like Causal Order, the relationship between LLMs and Causal Inference, Business applications of causal inference, Causal Survival Analysis, Double Machine Learning, and book reviews.

Ventagium Data Consulting - Data Engineer

2023 - present

- Administrator of a private repository for data ingestion and data management with Spark in Microsoft Fabric.
- Develop Causal Analysis to deliver valuable insights to our clients.
- Work with Azure (Azure SQL Databases, Storage Accounts or Data Lakes, Virtual Machines, Virtual Networks, Function Apps, etc.)
- Work with Microsoft Fabric: Orchestrate entire solutions on Spark and Delta Lake.

Education

Universidad Nacional Autónoma de México (UNAM) - Master in Philosophy of Science

- Thesis: "Machines that think on causes" ([Máquinas que piensan causas](#))
- Advisor: Dr. Francisco Hernández Quiroz (Faculty of Computer Science)
- GPA: 10 on a scale of 10. Best graded in my generation.
- Graduated with honors in June, 2024. Attended from 2021 to 2023.

2021 - 2023

Universidad Panamericana - Bachelor in Philosophy

- Graduated with honors in 2021. Attended from 2015 to 2019.

2015 - 2019

Certifications

- (2024) DP-600 Microsoft Fabric Analytics Engineer Associate
- (2024) DP-700 Microsoft Fabric Data Engineer Associate
- (2023) AZ-900 Microsoft Azure Fundamentals Certification
- (2022) Machine Learning *Stanford University* Online Certified Course by Andrew Ng

Languages

- Spanish (native)
- English (full proficiency)
- German (limited working proficiency)

Sample ML projects

- RNNs for weather, financial, and population forecasting.
- ALS for product recommendations.
- NNs for magnetic resonance image classification.
- Structural Causal Models to improve retail results.

Awards

- (2018) Second place at the XV International Logic Contest within the Masters category, organized by the Mexican Academy of Logic (AML)
- (2017) First place at the XIV International Logic Contest within the Undergraduate category, organized by the Mexican Academy of Logic (AML)

Skills

- Causal Inference
- Machine Learning
- Data Analysis
- Data Governance
- Data Management
- Security Best Practices
- DevOps

Tools

- Python (and pySpark)
- SQL
- HTML, CSS and Javascript
- MATLAB
- Pywhy
- pgmpy
- PyTorch
- Keras
- scikit-learn
- Microsoft Fabric
- Apache Spark
- SQL Databases
- Near-Real-Time Intelligence
- Data Lakes
- Power Platform
- Power BI

Research Experience

- **Research Group on History of Philosophy and Mathematics (UNAM)** 2023-Present
 - Led by Dr. Carmen Martínez Adame. Most members are professors at the Faculty of Sciences of the Universidad Nacional Autónoma de México (UNAM).
- **Research Group on Causal Inference and Causal Discovery (INAOE)** 2023-Present
 - Led by Dr. Enrique Sucar and Dr. Julio César Muñoz, both are researchers at the National Institute of Astrophysics, Optics and Electronics.
- **CONAHCYT Research Scholarship at Universidad Nacional Autónoma de México** 2021-2023
 - Causal Inference research.
 - Presented my research to the computer science community in the workshop CaDis 2023, at the INAOE (National Institute of Astrophysics, Optics, and Electronics).
- **Technology, Environment and the Pursuit of Wisdom (Duke University)** 2023
 - Dr. Peter Casarella and Sr. Damien Marie Savino, Ph.D. led this one-week seminar at Duke University. The seminar was organized by the *Lumen Christi Institute*, and we addressed topics on the meaning of science and engineering particularly regarding environmental sustainability.
- **Research seminar on Logic, Epistemology and Ethics of AI** 2020- 2022
 - Led by Dr. Karen González Fernández, and organized at the Universidad Panamericana. It is an international and interdisciplinary seminar. I participated in the organization of the seminar.

Publications

- “Book Review: *Privacy is Power* by Carissa Véliz”, *Tópicos*, No. 66 (2023), May-August.
<https://doi.org/10.21555/top.v660.2656>
- “Should Causal AI Rule Over Deep Learning?”, *Workshop on Causal Discovery CaDis 2023*, Mexican Academy of Computing (AMEXCOMP). December 12th, 2023. [ISBN 978-607-98941-8-4](#).

Teaching Experience

- **Universidad Panamericana - Ethics Subject Teacher** 2022 - 2023
- **Prepa UP - High School Ethics, Logic, and History of Art Subject Teacher** 2019- 2021

Civic Engagement

- (2020 - 2024) Cofounder and Editor of *Revista Spes*, a magazine focused on reflexive thinking, public life and civic journalism.
- (2018) A month of social service at Itiatio, Guerrero, México.
- (2014 - 2015) A year of service at Sta. María Quiebolani, Oaxaca, México.