Andres Guzman-Cordero

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RESEARCH INTERESTS

I study the intersection of decision theory and computational methods. My main research interests are centered around energy-based methods, such as deep Boltzmann machines, in conjunction with stochastic processes like time-series analysis.

EDUCATION

MPhil in Econometrics and Machine Learning September 2023 - July 2025
Tinbergen Institute, Amsterdam, Netherlands *Advanced Track*

BSc in Econometrics and Economics September 2020 - July 2023
Vrije Universiteit Amsterdam, Amsterdam, Netherlands *Honours Distinction*

BSc in Medicine and Surgery August 2016 - June 2020
Universidad Autonoma de San Luis Potosi, Mexico *Incomplete*

ACEDMIC EXPERIENCE

Tinbergen Institute | *Research Assistant* Nov 2023 - Present

- Working on a project for causal inference with multi-layered random forests and mixture of experts models with Prof. Francisco Blasques and Prof. Siem Jan Koopman.
- Working on a project for estimation and forecasting of time-varying parameters of environmental variables using neural networks with Prof. Andre Lucas

Vrije Universiteit Amsterdam | *Research Assistant* Apr 2022 - Jun 2023

- Developed a dynamic smooth-threshold SAR model to track particle movement in irregular lattices. Working papar "*Dynamic ST-SAR Model with Anisotropic Effects for Pollution Tracking*" with Prof. Andre Lucas.
- Developed a dynamic spatial econometric model to analyze the hidden effect of municipality merging in distance decay. Supervised by Prof. Henri de Groot.
- Research on Applied Spatial General Equilibrium Models. Focus on the optimization and calibration of the model. Redeveloped the implementation in Python. Supervised by Prof. Henri de Groot.

HONORS & ACCOLADES

Tinbergen Institute | *MPhil Full Scholarship* Sep 2023

- Awarded full scholarship for the two year research MPhil at the Tinbergen Insitute.

FSA Data Science Competition | *2023 Winner* Jun 2023

- Won the 2023 Data Science Competition organised by the FSA, BCG, Optiver, Metyis, Van Lanschot Kempen and PwC.

INDUSTRIAL EXPERIENCE

Model Developer | *ING* Sep 2022 - Nov 2023

- Development, implementation and improvement of quantitative models that help the bank make decisions, manage risk, and improve operational efficiency. Worked on models for CSRBB, IRRBB, derivative pricing and portfolio replication. Worked in Python, C++ and OCaml.

Machine Learning Research Intern | *Bit* Jun 2022 - Aug 2022

- Designed and prototyped advanced yet feasible systems. In my projects, I worked with deep neural networks, NLP and speech recognition. Managed a project to design an autonomous system for a large logistics company.

OTHER

Languages |

- Spanish (*Native*), English (*C2*), Dutch (*B1*), German (*B1*).
- C++, Java, Python, Julia, Haskell and OCaml.