

IGNACIO CUÑADO BARRAL

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Education

Delft University of Technology

September 2025 – June 2026

Bridging Program, Applied Mathematics

Delft, Netherlands

Proofs, Analysis, Real Analysis, Optimization, Measure and Probability Theory, Partial Differential Equations and Numerical Methods

Politecnico di Milano

September 2024 – February 2025

Minor, Mathematics and Statistics

Milan, Italy

Graduate-level coursework in Bayesian Statistics, Numerical Analysis for Machine Learning, Systems and Methods for Big and Unstructured Data and Operations Research

Delft University of Technology

September 2022 – June 2025

BSc, Computer Science and Engineering. Graduated Cum Laude. Thesis awarded 9.

Delft, Netherlands

OOP, Probability Theory & Statistics, Linear Algebra, Calculus, Machine Learning, Big Data Processing, Data Mining, Computational Intelligence, Algorithms & Data Structures, Algorithm Design, Algorithms for NP-Hard Problems.

Research Experience

Delft University of Technology

September 2025 – Present

Research Assistant

Delft, Netherlands

- Extending research on Relational Deep Learning by benchmarking Tabular Transformers against state-of-the-art graph learning models (RDL, RelGT, R-PNA, R-FraudGT), and hybrid configurations integrating Global Attention, Positional Encoding, and Relational-Tabular Transformer components. Working towards a preprint.
- Investigating graph coarsening strategies and extending their applicability to heterogeneous relational graphs to improve scalability of Relational Deep Learning models.

Delft University of Technology

April 2025 – June 2025

Bachelor Thesis

Delft, Netherlands

- Joined the Data Intensive Systems Lab at Delft University of Technology to research Graph Learning Methods on Tabular Data under the supervision of Prof. Kubilay Atasu.
- Researched local and global attention mechanisms for Graph Transformers in Relational Deep Learning.
- Achieved state-of-the-art results on classification and regression benchmarks with custom relation-aware local attention.
- [Link to thesis](#)

Politecnico di Milano

October 2024 – February 2025

Research Project

Milano, Italy

- Collaborated with Professor Guglielmi, researchers and students to develop two Bayesian approaches to clustering nations based on their educational performance using the PISA dataset.
- Designed and coded a semi-parametric approach and Nested Dirichlet Process (Rodríguez, Dunson, and Gelfand 2008)
- Presented in the Italian Society of Statistics (SIS 2025) in Genoa (doi:10.1007/978-3-031-96303-2_58).

Experience

Paro Software

February 2024 – Present

Part-time Software Engineer

Heemskerck, Netherlands

- Migrated payment providers for subscription-based tools of a company with over \$10k weekly volume.
- Developed multiple client-facing features for subscription upgrades, downgrades and handling with a redesigned UX.
- Automated the process of license-key generation and delivery to clients, reducing wait time from 1 day to 10 seconds.
- Streamlined the generation of invoices, allowing users to access all their available documents efficiently in one go.
- Migrated, updated and refactored a medical charity website with over 100,000 monthly visitors with 0 downtime.

Robeco

July 2025 – September 2025

Data Science Intern

Rotterdam, Netherlands

- Built a web-based tool to visualise company hierarchies and emissions data inheritance for over 3 million companies.
- Researched and developed a new attribution method incorporating novel trading data to measure decarbonisation of funds and mandates.
- Improved a candidate selection pipeline, increasing privacy and accuracy by over 50% whilst lowering inference time.

- Designed a microservice with Django to extract information and categorise grant documents with a modular pipeline using Meta's Hydra framework.
- Leveraged vector databases and NER for semantic search, and finetuned a BERTopic model to categorise grants.
- Exhaustively evaluated the models to measure the reliability of the process by combining F1 score with text summarisation, achieving a combined score of 0.77.
- Automated the search of academic papers and lexicographically ranked them based on relevance with transformers. Integrated the key findings and arguments into proposals documents with LLMs.

Technical Skills

Languages: Python, Java, C++, Scala, HTML/CSS, JavaScript, SQL, PHP, Julia, Solidity.

Technologies: Numpy, Pandas/Polars, PyTorch, Django, (Py)Spark, Turing, Bash, Git, Spring, React, Node, Laravel.

Certifications/Training: Ethereum Developer Bootcamp, IBM Advanced Data Science Bootcamp.

Extracurricular

Hackathons

- Delft Algorithm Programming Contest
- Team Epoch Hackathon, developed a regression model to predict tree biomass.

Honours and Awards

IE Universit: IE High Potential Scholarship

University of Edinburgh: Undergraduate Excellence Scholarship