



Brenda Nogueira

I am a PhD student in Computer Science and Engineering at the University of Notre Dame and a graduate student at the NSF Center for Computer-Assisted Synthesis. My research area is **Artificial Intelligence and ML Foundations**, focused on graph problems and imbalanced data challenges for drug discovery, treatment response, and material science.

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Education

- University of Notre Dame**
Notre Dame, IN, US
- Ph.D. in Computer Science and Engineering
- Jan 2024 - Present
Advisors: Prof. Nitesh V. Chawla & Prof. Nuno Moniz
- University of Porto**
Porto, Porto, Portugal
- Master Degree in Data Science
Sep 2022 - Dec 2024
- Bachelor Degree in Mathematics with complementary education in Computer Science
Sep 2017 - Jun 2022

Publications

- Spectral Manifold Harmonization for Graph Imbalanced Regression.** Brenda Nogueira, Gabe Gomes, Meng Jiang, Nitesh V Chawla, Nuno Moniz. arXiv 2025.
- Rethinking Evaluation in Compound Potency Prediction.** Brenda Nogueira, Nuno Moniz, Connor W. Coley, Nitesh Chawla. Research Square 2025.
- Graph-Imbalanced Regression for Rare Phenotypes.** Brenda Nogueira, Nuno Moniz, Nitesh V Chawla. Book of Extended Abstracts of the 12th Iberian Conference on Pattern Recognition and Image Analysis (IbPRIA2025).
- Experiential-Informed Data Reconstruction for Fishery Sustainability and Policies in the Azores.** Brenda Nogueira, Gui M. Menezes, Nuno Moniz, Rita P. Ribeiro. Discover Data, 2025.
- Dynamics of Fisheries in the Azores Islands: A Network Analysis Approach.** Brenda Nogueira, Ana Torres, Nuno Moniz, Gui M. Menezes. EPIA Conference on Artificial Intelligence. Cham: Springer Nature Switzerland, 2024.

Honors and Awards

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| Scientific Artificial Intelligence Graduate Fellowship | 2025 |
| NSF Center for Computed Assisted Synthesys Travel Award | 2025 |
| International Mathematics Without Borders Olympiad
Brazilian Section Gold medal | 2016 |

Selected Presentations

Automated Fish Size Measurement System for Long-Term Growth Studies in the Azores	ECML-PKDD SoGOOD Workshop 2025
Spectral Manifold Harmonization for Graph Imbalanced Regression	ICML DIG-BUGS Workshop 2025 KDD MLoG-GenAI Workshop 2025
Rethinking Evaluation in Compound Potency Prediction	NSF C-CAS annual meeting 2025 RISE Conference 2025
Graph-Imbalanced Regression for Rare Phenotypes	IBPRIA Doctoral Consortium 2025
Dynamics of Fisheries in the Azores Islands: A Network Analysis Approach	EPIA Conference 2024
Data reconstruction for fisheries analysis	IJUP 2023
Permanent Culture Workshops	AUGM 2015
Culture Workshops	IFRS-Porto Alegre Exhibition 2015
Extending the limits of curricular teaching through artistic cultural activities	MOEXP-IFRS 2014
Expanding the Limits of Professional Education through Artistic-Cultural Actions	IFRS-Bento Gonçalves Technical Exhibition 2014
ESPANGLES/LEEME	IFRS-Canoas Campus Science Fair 2013

Experiences

Research Assistant | Lucy Institute for Data & Society | 01/24-Present

Exploration of Artificial Intelligence challenges in graph-structured data, with a focus on imbalanced domains and chemistry data.

Research Fellow | INESC TEC | 07/23-12/23

Research Fellow at the CIBELE Project, dedicated to devising a comprehensive strategy for unraveling the intricacies inherent in cutting patterns, while also pioneering methods to anticipate and forecast complexity within novel pattern designs.

Research Fellow | FCUP | 10/22-06/23

Development of an automated email-entity association pipeline using natural language processing, text similarity, and entity linking methods. Scholarship financed by FCT.

Research Initiation Fellow | INESC TEC | 08-09/22

Development of a methodology for filling missing information about landings in the OKEANOS dataset using machine learning and pre-processing strategies.

Intern | INESC TEC | 03-06/22

Development of an online platform using Shiny/R for public use of the existing automated machine learning method. It also allows users to donate new datasets to improve the AutoML solution.

Intern | Ideavity | 03-06/22

Development of a sales platform and applications using Outsystems.

Intern | Evolutio | 10/21-02/22

Website creation using wagtail (based on Django). Python, HTML, and CSS were used as programming languages.

Volunteer Intern | INESC TEC | 07/21

Selection and implementation of face-based sleepiness recognition algorithms; performance evaluation (accuracy, time, complexity, etc.) on public data; app/web-based demonstrator development; performance evaluation on data acquired in real-time Python, HTML, CSS, and JavaScript are the languages used. The project is available on GitHub: https://github.com/brendacnogueira/sleep_detection_app.git

Intern | Federal Institute of Rio Grande do Sul | 2016

Internship extension at the Culture Project's Permanent Workshops: event organization, project coordination, and work presentation.

Intern | Federal Institute of Rio Grande do Sul | 2014/2015

Tutoring in mathematics, physics, biology, chemistry, accounting, and finance

Organizer

Learning on Graphs Conference (LoG) Meetup	2024
III Academic Week of the Logistics Course (FRS Canoas)	2015
IV Arte Exposition (IFRS Canoas)	2015
III Cultural Event (IFRS Canoas)	2015
II Cultural Event (IFRS Canoas)	2014
I Academic Week of the Technical Course in Administration (IFRS Canoas)	2014