Maria Daniela Leite de Souza

PhD Candidate in Computer Science
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EDUCATION

- **Max Planck Institute for Intelligent Systems** — Tübingen, Germany
  Ph.D. candidate in Computer Science (IMPRS-IS Scholar) — *2019 - present*
- **Brazilian Center for Research in Physics** — Rio de Janeiro, Brazil
  M.Sc. in Physics — *2017 - 2019*
- **Regional University of Cariri** — Ceará, Brazil
  B.Sc. in Physics (GPA: 9.6/10) — *2013 - 2017*

RESEARCH PROJECTS

- **Solving Mixed Integer Programs Using Graph Neural Networks - Research Internship**: (Work in progress) Using Graph Neural Networks to build better heuristics in Mixed Integer Linear Programming. Under the supervision of Dr. Enrico Bartolini (Huawei Munich Research Center).
- **Route Optimization - PhD Thesis**: (Work in progress) Exploring network topologies from routing optimization problems. Under the supervision of Dr. Caterina De Bacco (MPI-IS).
- **Topological Anderson insulators: from SDRG to Machine Learning (Master Thesis)**: Investigating Anderson localization in a disordered wire with chiral symmetry by introducing a second scaling parameter. Under the supervision of Dr. Tobias Micklitz (CBPF). (2019)

PUBLICATIONS

- **Paper**: **Leite, D.**, De Bacco, C. (2022). Revealing the similarity between urban transportation networks and optimal transport-based infrastructures. arXiv preprint arXiv:2209.06751. *(Under review at Nature Communications)*
- **Paper**: **Leite, D.**, Baptista, D., Ibrahim, A., Facca, E., De Bacco, C. (2022). Community Detection in networks by Dynamical Optimal Transport Formulation. Scientific Reports 12, 16811 (2022)
- **Paper**: Ibrahim, A., **Leite, D.**, De Bacco, C. (2022). Sustainable optimal transport in multilayer networks. Physical Review E 105, (2022): 064302
- **Paper**: Baptista, **Leite, D.**, Facca, E. et al. Network extraction by routing optimization. Scientific Reports 10, 20806 (2020).

EXPERIENCE

- **Huawei Research Center** — Munich, Germany
  Ph.D. Research Intern - Intelligent Cloud Technologies lab — *Nov 2022 - present*
- **Sealtech** — Rio de Janeiro, Brazil
  Co-founder and Chief Technology Officer (CTO) — *2018 - 2019*

OTHER PROJECTS

- **COO-LESS**: App that helps users designing shopping lists to fit multiple lifestyle choices. The algorithm digs through available offers and recommends greener options, enabling consumers to fight climate change while staying on a budget. (2021)
- **G-Flow**: A recommendation system to suggest and classify advertisement subjects to be exhibited on live TV based on real-time speech analysis from live video content. (2019)
- **BeCool**: Machine Learning for bike-sharing systems: encouraging users to use more sustainale means of transportation by rewarding them based on the amount of saved CO_2. (2018)

SKILLS

- **Programming**: Python (main), C++ (basic), JavaScript (basic), IBM Quantum (basic)
- **Frameworks**: Scikit, TensorFlow, PyTorch (PyTorch Geometric)
- **Tools**: Git, SQL
- **Languages**: Brazilian Portuguese – native, English – C2, Spanish – C2, German – B2, Italian – B2, French – A2
- **Soft Skills**: Teamwork, problem solving, positive atitude

HONORS AND AWARDS

- Third place at Climate Changemakers (developing solutions to the climate crisis) – 2021
- Second place at Hackathon Globo (developing smart solutions to the largest media group in Latin America) – 2019
- First place at Hacking.Rio (the biggest Hackathon in Latin America) – 2018
- First place at Uber Hack (developing smart solutions to improve mobility in Brazil) – 2018
- Academic Excellence Award – 2017

OTHER INTERESTS

- **Sports**: volleyball, dancing, climbing, hiking, cycling
- **Cooking**: anything
- **Travelling**: always looking forward to the next destination