

Breno Serrano de Araujo

🏠 Tegernseer Landstr. 205A, 81549 Munich, Germany

✉ breno.serrano@tum.de ☎ +49-176-62703224

in linkedin.com/in/breno-serrano-de-araujo/

EDUCATION

Technical University of Munich, Germany Nov. 2020 – present

PH.D. STUDENT IN MANAGEMENT, TUM School of Management

Advanced Optimization in a Networked Economy (AdONE) Research Training Group

Advisor: Maximilian Schiffer

Massachusetts Institute of Technology, Cambridge, MA, USA Oct. 2023 – Feb. 2024

VISITING PH.D. STUDENT, Sloan School of Management

Host Professor: Alexandre Jacquillat

Pontifical Catholic University of Rio de Janeiro (PUC-Rio), Brazil 2018 – 2020

M.SC. IN COMPUTER SCIENCE

Advisor: Thibaut Vidal

Federal University of Rio de Janeiro (UFRJ), Brazil 2011 – 2017

B.SC. IN ELECTRONIC AND COMPUTER ENGINEERING, MAGNA CUM LAUDE

Technical University of Munich, Germany 2014 – 2015

EXCHANGE STUDENT, Electrical Engineering and Information Technology

PROFESSIONAL EXPERIENCE

TECHNIPFMC, Research and Development Engineer, Brazil 2018 – 2020

- Development of hybrid machine learning and finite element analysis (FEA) software for the design of offshore marine structures.

ACCENTURE, Data Science Analyst, Brazil 2017 – 2018

- Development of machine learning and deep learning models for different applications, including yield forecasting for a sugar-producing company and fraud detection for an auto insurance company.

CHOICE TECHNOLOGIES HOLDING, Data Science Intern, Brazil 2016 – 2017

- Data preparation, analysis, and visualization.

PUBLICATIONS

- [1] B. Serrano, A. Florio, S. Minner, M. Schiffer, T. Vidal (2024). Contextual Stochastic Vehicle Routing with Time Windows, *arXiv preprint arXiv:2402.06968*.
To be submitted to Operations Research
- [2] B. Serrano, T. Vidal (2024). Community Detection in the Stochastic Block Model by Mixed Integer Programming, *Pattern Recognition*, 152, 110487.
- [3] B. Serrano, S. Minner, M. Schiffer, T. Vidal (2024). Bilevel Optimization for Feature Selection in the Data-Driven Newsvendor Problem, *European Journal of Operational Research*, 315(2), 703-714.
- [4] Í. Santana, B. Serrano, M. Schiffer, T. Vidal (2022). Support Vector Machines with the Hard-Margin Loss: Optimal Training via Combinatorial Benders' Cuts, *arXiv preprint arXiv:2207.07690*.
Under review at the Journal of Global Optimization

- [5] V. Ribeiro Machado da Silva, L. Volnei Sudati Sagrilo, B. Serrano de Araujo (2022). Applied Deep Learning for Slender Marine Structure Dynamic Analysis, *Journal of Offshore Mechanics and Arctic Engineering*, 144(2), 021701.
- [6] V. Ribeiro Machado da Silva, B. Serrano de Araujo (2020). Convolutional Neural Networks Applied to Flexible Pipes for Fatigue Calculations, *Proceedings of the ASME 2020 39th International Conference on Ocean, Offshore and Arctic Engineering*, vol. 4: Pipelines, Risers, and Subsea Systems. Virtual, Online.
- [7] B. Serrano de Araujo, H. de Almeida, F. de Mello (2019). Computational Intelligence Methods Applied to the Fraud Detection of Electric Energy Consumers, *IEEE Latin America Transactions*, 17(01), 71-77.

TALKS

Bilevel Optimization for Feature Selection in the Data-Driven Newsvendor Problem

- Oct. 15–18, 2023: *2023 INFORMS Annual Meeting*, Phoenix, AZ, USA.
- July 3–6, 2022: *32th European Conference on Operational Research (EURO 2022)*, Espoo, Finland.

Data-Driven Approaches for the Feature-based Vehicle Routing Problem with Time Windows

- July 23–26, 2023: *2nd Triennial Conference of the INFORMS Transportation and Logistics Society (TSL 2023)*, Chicago, IL, USA.

Support Vector Machines with the Hard-Margin Loss: Optimal Training via Combinatorial Benders' Cuts

- April 26–28, 2023: Invited talk at the workshop *Exploring synergies: Machine Learning meets Physics and Optimization*, *Thematic Einstein Semester on Mathematical Optimization for Machine Learning*, Zuse Institute Berlin, Germany.

ACADEMIC ACTIVITIES AND AWARDS

Awarded the TSL Cross-regional Doctoral Grant (2023) in the amount of \$1500 (USD).

Reviewer for journals: *International Journal of Production Economics (IJPE)* and *Transactions in Operations Research (TOP)*.

Subreviewer for conferences: *11th Triennial Symposium on Transportation Analysis conference (TRISTAN 2022)* and *2nd Triennial Conference of the INFORMS Transportation and Logistics Society (TSL 2023)*.

Co-organizer of the AdONE Research Retreat 2021, Oct. 11–13, 2021, Dießen am Ammersee, Germany.

REFERENCES

MAXIMILIAN SCHIFFER, TUM (Primary Ph.D. Advisor)

✉ schiffer@tum.de

STEFAN MINNER, TUM (Secondary Ph.D. Advisor)

✉ stefan.minner@tum.de

THIBAUT VIDAL, POLYTECHNIQUE MONTRÉAL

✉ thibaut.vidal@polymtl.ca

ALEXANDRE JACQUILLAT, MIT

✉ alexjacq@mit.edu