

# Breno Serrano de Araujo

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## EDUCATION

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- Technical University of Munich**, Germany Nov. 2020 – Nov. 2024  
PH.D. IN OPERATIONS RESEARCH AND MANAGEMENT SCIENCE, TUM School of Management  
*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

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- MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Postdoctoral Associate, USA 2025 – present  
Intelligent Logistics Systems Lab, MIT Center for Transportation & Logistics (CTL)
- TECHNICAL UNIVERSITY OF MUNICH, Research Assistant, Germany Nov. 2020 – Nov. 2024  
Research Training Group (RTG) Advanced Optimization in a Networked Economy (AdONE)
- TECHNIPFMC, Research and Development Engineer, Brazil 2018 – 2020
- ACCENTURE, Data Science Analyst, Brazil 2017 – 2018
- CHOICE TECHNOLOGIES HOLDING, Data Science Intern, Brazil 2016 – 2017

## PUBLICATIONS

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- [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

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Optimizing a ride-hailing system with a mix of on-demand and pre-booked customers under distributional shift

- Sept. 3–6, 2024: *International Conference on Operations Research (OR 2024)*, Munich, Germany.

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

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

Reviewer for journals: *Networks*, *Omega*, *European Journal of Operational Research (EJOR)*, *International Journal of Production Economics (IJPE)* and *Transactions in Operations Research (TOP)*.

Subreviewer for conferences: *Conference in Emerging Technologies in Transportation Systems (TRC-30)*, *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

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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 (M.Sc. Advisor)

✉ thibaut.vidal@polymtl.ca