Alessia Rigonat

PhD in Applied Probability

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Research interests

- queuing theory
- mean-field analysis
- particle systems
- multi-scale Markov Processes
- stochastic networks with blocking

Research Experience

2023– **PhD in Applied Probability**, *INRIA Paris (team DYOGENE) and DI ENS*
Supervisors: Christine Fricker, Hanene Mohamed

2023 **Post Degree Internship**, *Polytechnique Montréal - Communauto, Canada*, Data analysis, time series forecasting, simulation
Supervisors: Christine Fricker, Martin Trepanier

2022 **Master 2 Internship**, *INRIA Paris (team DYOGENE)*, Stochastic modeling of a free-floating car sharing system
Supervisors: Christine Fricker, Hanene Mohamed

Education

2021–2022 **Sorbonne University, France**, *International Mobility*

2020–2022 **Master Degree in Applied Mathematics**, *University of Trento, Italy* , Master Thesis Title: Mean-field analysis of stochastic networks with loss: application to a model of free-floating car sharing
Degree: 110/110 cum laude

2019–2020 **Bergen University, Norway**, *International Mobility*

2017–2020 **Bachelor Degree in Mathematics**, *University of Trento, Italy*, Thesis title: Stochastic modeling of an epidemic outbreak
Degree: 108/110

Publications and Preprints

[1] A new stochastic model for car-sharing suited to free-floating, *WCTR2023, Transportation Research Procedia, 82, 2395-2409*, 2025, with Christine Fricker, Hanene Mohamed and Martin Trepanier,[doi].

[2] Stochastic averaging and mean-field for a large system with fast varying environment with applications to free-floating car-sharing, with Christine Fricker and Hanene Mohamed,[hal-04714886], submitted to QUESTA.

Talks and Posters

2025 Talk, **INFORMS APS Conference**, Georgia Tech, Atlanta, *Large-scale analysis of a multi-scale Jackson network with two classes of customers*

2025 Talk, **MATHNET seminar**, INRIA, Paris, *Large-scale analysis of a multi-scale Jackson network with two classes of customers*

2025 Poster, **Workshop on Product Form Probability Distributions**, Eurandom, Eindhoven, *Mean-field analysis of a Jackson-like network with two types of customers: guessing the limiting invariant distribution*

2024 Talk, **Workshop on Performance Evaluation**, IRIT, Toulouse, *Mean-field analysis of a multi-scale stochastic model for free-floating car sharing*

2024 Poster, **Stochastic Networks**, KTH, Stockholm, *A model with fast varying environment for free-floating car sharing*

2024 Talk, **Modal'X Seminar**, Université Paris Nanterre, *Large Scale Analysis of a Stochastic Model for Free-Floating Car-Sharing*

2024 Poster, **PhD day DIM AI4IDF**, INRIA Paris, *Stochastic modeling and AI predictive analysis for shared transport systems*

2023 Talk, **PGMO Days 2023**, EDF Lab, Saclay, *Large Scale Analysis of a Stochastic Model for Free-Floating Car-Sharing*

2023 Talk, **World Conference on Transport Research 2023**, Montreal, *A new stochastic model for car-sharing suited to free-floating*

Teaching

2024-2025 **Sorbonne University**, *Teaching Assistant*
Spring 2025: Introduction to Probability (Mathematics, Bachelor's 2nd year)

2023-2024 **Paris-Nanterre University**, *Teaching Assistant*
Spring 2024: Statistics (Economics, Bachelor's 2nd year)

Outreach

2023 RJMI: Rendez-vous Jeunes Mathématiciennes et Informaticiennes INRIA Paris, (Group activities for girls in mathematics and informatics)

Language Skills

Italian Native

English Fluent

French Fluent

Computer Skills

Programming Python

Other LaTeX