

Orlane Rossini

✉ orlane.rossini@umontpellier.fr     orlross.github.io

Current position

I am currently a PhD fellow in biostatistics at CNRS and an assistant lecturer at Montpellier's Faculty of Science for the Mathematics department.

Education

PhD in Applied Mathematics with specialisation in Biostatistics <i>Institut Montpelliérain Alexander Grothendieck (IMAG)</i>	2022 - Expected October 2025 <i>Montpellier, France</i>
<ul style="list-style-type: none">• Thesis subject: Model-based reinforcement learning for the control of partially observable piecewise deterministic semi-Markov decision processes• Supervisors: Benoîte de Saporta, Alice Cleynen and Régis Sabbadin	
Master in Data Science & Statistical Modeling <i>University of South Brittany</i>	2020 - 2022 <i>Vannes, France</i>
Bachelor of Science in Computer Science & Mathematics (international course) <i>University of Bordeaux</i>	2017 - 2019 <i>Talence, France</i>
<ul style="list-style-type: none">• Erasmus experience: Warsaw University of Technology (9 months in Poland)	

Academic experience

University of Grenoble, INSERM, IAB <i>Student Intern - Research engineer</i>	Jan 2022 – Sep 2022 <i>Grenoble, France</i>
<ul style="list-style-type: none">• Subject: Accelerated epigenetic placental aging as a biomarker of pregnancy exposure to ambient air pollution• Supervisors: Johanna Lepeule, Aurélie Nakaruma, Lucile Broséus and François Septier	
Regional Health Observatory of French Guiana <i>Mentored project - Intern (remotely)</i>	Jan 2021 – May 2021 <i>Cayenne, France</i>
<ul style="list-style-type: none">• Subject: Analysis of patient flow in the emergency department and its associated factors in French Guiana between 2018 and 2020• Supervisors: Joseph Rwagitinywa and Evans Gouno• Extraction and exploitation of data from the French National Health Data System (SNDS).	

Publications

In Proceedings of Conferences	
<ul style="list-style-type: none">• <i>Deep Reinforcement Learning for Controlled Piecewise Deterministic Markov Process in Cancer Treatment Follow-up</i> in Journée Santé et IA by A. Cleynen, B. de Saporta, O. Rossini, R. Sabbadin, M. Vinyals July 2024• <i>Deep reinforcement learning for controlled piecewise deterministic Markov process in cancer treatment follow-up</i> in Journées des Statistiques de France by A. Cleynen, B. de Saporta, O. Rossini, R. Sabbadin, M. Vinyals May 2024• <i>An example of medical treatment optimization under model uncertainty</i> in Journées des Statistiques de France by A. Cleynen, B. de Saporta, O. Rossini, R. Sabbadin. July 2023	

Teachings

Exercises - Scientific Reasoning <i>First-year Bachelor's degree in biology</i>	2023 - 2025
<ul style="list-style-type: none">• Set theory, Random Variables with classical distributions, Conditional Probabilities• Exam marking	
Exercises - Probability & Statistics <i>First-year Bachelor's degree in computer sciences</i>	2024-2025
<ul style="list-style-type: none">• Descriptive statistics, Enumeration and laws of probability, Inferential statistics• Exam writing and marking	
Exercises - Statistical learning & Statistics <i>Second-year Master's degree in Statistics and Data Science</i>	2024

- Supervised learning, Support vector machines (SVM), Decision trees, Neural networks, Clustering
- Exam marking

Exercises - Linear Algebra

2023

First-year Bachelor's degree in mathematics

- Complex number, Linear system, Linear subspace, Matrices, Linear application
- Exam writing and marking

Supervision

Co-supervision (50% with A. Vernay, PHD fellow IMAG, Montpellier) of a 1st year observation internship Khalil Elhajoui

- **Subject:** Introduction to Supervised Learning and the Use of Perceptrons

Scientific mediation

- Workshop at the *Fête de la Science* "Mathematics with head and hands" (2022)
- Workshop at the *Girls, Math and Computer Science* event (2023)
- Workshop at the *Math en Jeans* conference (2024)

Talks

International conferences

- *An example of medical treatment optimization under model uncertainty*, 21st INFORMS Applied Probability Society Conference, June 2023
- *Maternal exposure to ambient air pollution and placental epigenetic aging: Developing a new clock and estimating associations*, Australian Mathematical Society, December 2022

National conferences

- *Predicting Yeast Translation Efficiency from RNA Modification and Degradation Features: A Machine Learning Approach*, Journées de Biostatistiques, November 2024
- *Deep reinforcement learning for piecewise deterministic Markov process control*, Rencontres Montpellier-Sherbrooke, June 2024
- *Stochastic dynamic control: an approach based on semi-Markov models*, 10èmes Rencontres des Jeunes Statisticien.ne.s, April 2024
- *Stochastic dynamic control: an approach based on semi-Markov models, application to the optimization of a medical treatment*, 8èmes rencontres de Statistique of University of South Brittany, November 2023
- *An example of medical treatment optimization under model uncertainty*, Processus markoviens, semi-markoviens et leurs applications, June 2023
- *Maternal exposure to ambient air pollution and placental epigenetic aging: Developing a new clock and estimating associations*, IMAG PhD student days, February 2023
- *Model-based reinforcement learning for the control of partially observable, piecewise deterministic semi-Markovian decision processes*, INRAE-MIAT PhD student days, January 2023

Administratives

- Elected member of the IMAG laboratory council
- Member of the sustainable development group at the IMAG laboratory
- Member of the organising committee of the *Math en Jeans* conference