

# Marie Bourlioux

PhD student in statistics

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## Education

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- **PhD in Statistics**

*University Clermont Auvergne • October 2025 - present*

- Supervised by Anne-Françoise Yao-Lafourcade, Paul-Marie Grollemund and Stéphanie Bornes
- Study of the parametric dynamics of a microbial ecosystem through the development of a Poisson Log Normal model incorporating functional covariates.
- Teaching Assistant 64 hours per year at IUT Aurillac

- **Master's degree in Applied Mathematics, Statistics • with highest honour**

*University Clermont Auvergne • 2023 - 2025*

- Excellence scholarship from Graduate Track Maths-Physique in the second year of Master's degree

- **Bachelor's degree in Mathematics • with highest honour**

*University Clermont Auvergne • 2020 - 2023*

## Internships

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- **Master 2 internship in functional data analysis**

*IUT Aurillac • March 2025 - August 2025 (6 months)*

- Analysis and discrimination of MALDI-TOF mass spectra for microorganisms identification at strain-levels
- Functional data analysis using basis function expansions or wavelet decompositions
- Neural networks architecture designed for functional data

- **Master 1 internship in biostatistics**

*Unité Mixte de Recherche sur le Fromage (UMRF) • April 2024 - July 2024 (4 months)*

- Integration of statistical method and new features into an application for metabarcoding data processing using R-Shiny programming
- Production of an Entity-Relationship diagram for the design of a database

## Conference abstracts and posters

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Bourlioux M., Grollemund P.M., Arous C., Geneste A., Grizon A. Méthodes statistiques et de deep learning pour la discrimination de spectres de masse MALDI-TOF. *JdS 2026*. 📄

Bourlioux M., Grollemund P.M., Arous C., Geneste A., Grizon A. Microorganisms identification at strain-level: statistical and deep learning methods for analysis of Biotyper MALDI-TOF mass spectra. *CBL 2026*. 📄

Bourlioux M., Grollemund P.M., Arous C., Geneste A., Grizon A. Microorganisms identification at strain-level: statistical and deep learning methods for analysis of Biotyper MALDI-TOF mass spectra. *Microbiomes Solutions symposium 2025*. 📄

Michel E., Bourlioux M., Poix C., Grollemund P.M., Theil S., et al. A database to predict safety risks of raw milk cheeses from farming practices in climate change context. *JOBIM 2025*. 📄 📄

## Technical skills

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**Programming:** R • Python • SAS • SQL • VBA • C

**Languages:** French (native) • English (professional proficiency, technical and scientific reading)