

# Lidia André

POSTDOCTORAL RESEARCH FELLOW

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## Education

### Lancaster University

United Kingdom

#### PHD STATISTICS

2021 - 2025

- Thesis: "Modelling and inference for the body and tail regions of multivariate data"
- Supervisors: Professor Jennifer Wadsworth

### Lancaster University

United Kingdom

#### MRES STATISTICS AND OPERATIONAL RESEARCH, GRADE: DISTINCTION

2020 - 2021

- Project: "Dependence Models for Actuarial Data"
- Supervisors: Professor Jennifer Wadsworth, Dr. Adrian O'Hagan (UCD, Ireland)

### Faculty of Sciences, University of Lisbon

Portugal

#### MSC STATISTICS AND OPERATIONAL RESEARCH, GRADE: 18/20

2017 - 2019

- Dissertation: "Copula Models for Dependence: Comparing Classical and Bayesian Approaches"
- Supervisors: Dr. Patrícia de Zea Bermudez

### University of Bologna

Italy

#### MSC STATISTICAL SCIENCES - ERASMUS PROGRAMME

2017 - 2018

- Analysis of Categorical Data: 24/30
- Survey Sampling: 24/30
- Systems and Algorithms for Data Science: 30/30

### Lisbon School of Economics & Management, University of Lisbon

Portugal

#### BSC MATHEMATICS APPLIED TO ECONOMICS AND MANAGEMENT, GRADE: 15/20

2014 - 2017

## Professional Experience

2025— **Postdoctoral Research Fellow: X-vine models for multivariate extremes**, Université de Namur

2024 **Research Associate: Computational Skills Project**, Lancaster University

2021 - 2023 **Graduate Teaching Assistant**, Department of Mathematics and Statistics, Lancaster University

**Research Fellow:** Spatial distribution of a fish species where the focus was on assessing whether including

2019 - 2020 Preferential Sampling would improve the estimation of such distribution, Portuguese Institute for Sea and Atmosphere, Portugal

2012 - 2017 **Monitor at Summer Camp (for children aged 3-10)**, Junta de Freguesia de Carnide, Lisboa, Portugal

## Research Interests

**Main interests:** Statistics of Extremes (with particular interest in multivariate extremes), Computational Statistics and Copula Theory

**Other interests:** High Dimension Statistics, Spatial Statistics, Bayesian Inference and Machine Learning/AI

## Publications

### PUBLISHED

**André, L. M.**, Campbell, R., D'Arcy, E., Farrell, A., Healy, D., Kakampakou, L., Murphy, C., Murphy-Barltrop, C.J.R., Speers, M. (2024). Extreme value methods for estimating rare events in Utopia. *Extremes*.

**André, L. M.**, Wadsworth, J. L., O'Hagan, A. (2024). Joint modelling of the body and tail of bivariate data. *Computational Statistics & Data Analysis*.

**André, L. M.**, Figueiredo, I., Carvalho, M. L., Simões, P., Natário, I. (2020). Spatial Modelling of Black Scabbardfish Fishery Off the Portuguese Coast. *ICCSA 2020*.

**André, L. M.**, de Zea Bermudez, P. (2020). Modelling dependence between observed and simulated wind speed data using copulas. *Stochastic Environmental Research Risk Assessment*.

## IN REVIEW

**André, L. M.**, Tawn, J. A. (2025). Gaussian mixture copulas for flexible dependence modelling in the body and tails of joint distributions. *In review and submitted to Computation Statistics & Data Analysis*. Preprint in <https://arxiv.org/pdf/2503.06255>

**André, L. M.**, Wadsworth, J. L., Huser, R. (2025). Neural Bayes inference for complex bivariate extremal dependence models. *In review and submitted to Extremes*. Preprint in <https://arxiv.org/pdf/2503.23156>

## Awards

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2023 **23rd European Young Statisticians Meeting**, European Regional Committee of the Bernoulli Society

2019 **XXIV Congresso da Sociedade Portuguesa de Estatística (Scholarship)**, Sociedade Portuguesa de Estatística

## Conferences

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### POSTER PRESENTATIONS

**February 2024.** *ML-based inference for complex dependence models*. Causality in Extremes Workshop, Geneva, Switzerland.

**January 2024.** *Jointly Modelling the Body and Tail of Multivariate Data*. STOR-i Annual Conference, Lancaster, UK.

**May 2022.** *Jointly Modelling the Body and Tail of Multivariate Data*. 5th International Conference on Advances in Extreme Value Analysis and Application to Natural Hazards, Orlando, Florida, USA.

**April 2022.** *Jointly Modelling the Body and Tail of Multivariate Data*. Data on the Lake Conference, Windermere, UK.

### CONTRIBUTED PRESENTATIONS

**April 2025.** *Modelling and inference for the body and tail regions of multivariate data*. Royal Statistical Society Seminar, Plymouth, UK.

**March 2025.** *Neural Bayes inference for extremal dependence models*, EDT STAT-ACTU, Brussels, Belgium.

**October 2024.** *Neural network based inference for complex dependence models*, KAUST/INRAE/Lancaster workshop, Online.

**September 2023.** *Joint modelling of the body and tail of bivariate data*. STOR-i Extremes Workshop, Lancaster, UK.

**September 2023.** *Joint modelling of the body and tail of bivariate data*. 23rd European Young Statisticians Meeting, Ljubljana, Slovenia.

**June 2023.** *Joint modelling of the body and tail of bivariate data*. Extreme Value Analysis Conference, Milan, Italy.

**November 2022.** *Joint modelling of the body and tail of bivariate data*, KAUST/INRAE/Lancaster workshop, Online.

**March 2022.** *Introduction to Extremes with R*. University of Lisbon Extremes Webinar (Joint workshop), Lisbon, Portugal.

**July 2020.** *Spatial Modelling of Black Scabbardfish Fishery off the Portuguese Coast*. 20th International Conference on Computational Science and Its Applications, Cagliari, Italy.

**November 2019.** *Bivariate Copula Models for Dependence: Application to Wind Speed Data*. XXIV Congresso da Sociedade Portuguesa de Estatística, Amarante, Portugal.

## Teaching Experience

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MATH101: **Calculus** (Autumn 2021)

MATH102: **Further Calculus** (Autumn 2021)

MATH235: **Statistics II** (Spring 2022, 2023)

MATH331: **Bayesian Statistics** (Autumn 2021, 2022)

MATH403: **Statistical Foundations I** (Autumn 2023)

MATH502: **Statistical Fundamentals II** (Autumn 2021, 2022)

STOR605: **Inference** (Autumn 2021)

## Activities

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### COMMITTEES *(O - Organiser; CO - Co-Organiser; OC - Organising Committee; CM - Committee Member)*

2023 - 2024 **Lancaster Extremes research group**, O  
2022 - 2023 **STOR-i computing research group**, CO

2022 - 2023 **STOR-i Extremes Workshop**, OC  
2022 - 2023 **STOR-i Womens+ Network**, CM

### SUPERVISION

July 2022 **Rui Zhang**, STOR-i Intern

*Lancaster University*

### COMPUTING SKILLS

**Primary:** R (and R packaging), Julia,  $\text{\LaTeX}$   
**Frequent use:** HPC, SLURM, GitHub  
**Brief knowledge:** Python, MATLAB, C++, SPSS, SQL, JAGS,  
WinBUGS, OpenBUGS, GiveWin, TSP

### LANGUAGES

**Native:** **Portuguese**, Proficiency  
**C2:** **English**, IELTS Academic: Band score 7.5  
**A2:** **Italian**, Alma Mater Studiorum Unibo  
**A1:** **Spanish**, COMPETIR - Formação e Serviços, SA