Lídia 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
2019 - 2020	**Research Fellow:** Spatial distribution of a fish species where the focus was on assessing whether incuding 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.*

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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

Conferences

Pᴏsᴛᴇʀ Pʀᴇsᴇɴᴛᴀᴛɪᴏɴs

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.

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June 2025. *Neural Bayes estimation and selection of complex bivariate extremal dependence models*. Extreme Value Analysis Conference, Chapel Hill, North Carolina, USA.

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

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

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