Mengran **Li**

PhD Student in Statistics

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Summary

I am a doctoral researcher working at the interface of causal inference and extreme value theory, with a focus on methodological development for high-impact rare events.

My research develops causal discovery, estimation, and attribution tools for extremes, motivated by applications in climate risk and complex systems. I combine modern causal methodology, extreme value theory, and scalable computation, with outputs including peer-reviewed publications and open-source software.

Education

University of Glasgow — *Glasgow, UK*

Doctor of Philosophy in Statistics — *2022 - 2026*

University of Glasgow — *Glasgow, UK*

Master of Science in Statistics with distinction

Thesis: Spatiotemporal modelling and prediction of average flows in Scotland based on generalized additive models — *2021 - 2022*

Southwestern University of Finance and Economics — *Chengdu, China*

Bachelor of Science in Statistics (Major)

Bachelor of Science in Finance (Minor) — *2015 - 2019*

Publications

* denotes corresponding author

1. **Li, M.***, Cuba, D., Hu, C., & Castro-Camilo, D. (2024). A wee exploration of techniques for risk assessments of extreme events. *Extremes*. doi:10.1007/s10687-024-00500-5
2. **Li, M.*** & Castro-Camilo, D. (2025). On the importance of tail assumptions in climate extreme event attribution. *arXiv:2507.14019 Climatic Change under review*.
3. **Li, M.*** & Castro-Camilo, D. (2026). Tail-Calibrated Estimation of Extreme Quantile Treatment Effects. *In preparation*.
4. **Li, M.*** & Castro-Camilo, D. (2026+). High-Dimensional Causal Discovery in Multivariate Extremes *In preparation*.
5. **Li, M.*** & Castro-Camilo, D. (2025). eFCM: An R package for the Exponential Factor Copula Model. CRAN R package. cran.r-project.org/package=eFCM

Research Experience

Causal discovery in Extremes — *Glasgow, UK*

It aims to adapt structure learning techniques, such as those based on directed acyclic graphs (DAGs), to settings characterized by heavy-tailed distributions and tail dependence. The goal is to uncover underlying causal pathways that contribute to the generation or propagation of rare outcomes. — *2025 -*

Extreme Quantile Treatment Effect — *Glasgow, UK*

Developed a unified framework that transforms extreme quantile levels into tail quantile estimates under a causal inference setting, allowing for more precise inference of treatment effects in rare-event regimes. — *2023 - 2025*

EVA 2023 Data Challenge *Glasgow, UK*

In collaboration with two other PhD students, we explored techniques for modeling extreme quantiles and multivariate extremes. This work was published in the Extremes journal. *May 2023*

Extreme Event Attribution *Glasgow, UK*

Applies causal inference methods for extreme event attribution to assess the impact of anthropogenic climate change on extreme weather. The work is under review for the *Climatic Change*. Also developed an R package (eFCM) published in R CRAN. *2022 - 2025*

Teaching Experience

University of Glasgow *Glasgow, UK*

Tutor and Demonstrator *2022 - 2026*

- **2025 - 2026**: Introduction to R Programming, Introduction to Statistical Programming in R and Python, Flexible Regression, Biostatistics, Bayesian Statistics, Time Series, Advanced Predictive Models.
- **2024 - 2025**: R Programming, Introduction to Statistical Programming in R and Python, Flexible Regression, Bayesian Statistics, Time Series, Data Analysis.
- **2023 - 2024**: Introduction to R Programming, Flexible Regression, Time Series, Data Analysis.
- **2022 - 2023**: Math 1, Math 2F, Stats 2, Time Series, Data Analysis.

Conference Presentations

1. **First workshop of the Glasgow-Edinburgh Extremes Network**, 11 December 2025, University of Glasgow, Glasgow (UK). *Talk presentation.*
2. **ISI World Statistics Congress 2025**, 5–9 October 2025, International Statistical Institute, The Hague (Netherlands). *Talk presentation.*
3. **RSS 2025 International Conference**, 1–4 September 2025, Royal Statistical Society, Edinburgh (UK). *Poster presentation.*
4. **The 6th International Conference on Advances in Extreme Value Analysis and Application to Natural Hazards (EVAN 2024)**, 16–19 July 2024, Istituto Veneto di Scienze, Venice (Italy). *Talk presentation.*
5. **STOR-i Extremes Workshop**, 20–22 September 2023, Lancaster University, Lancaster (UK). *Talk presentation.*
6. **Research Students' Conference in Probability and Statistics**, 11–14 September 2023, University of Sheffield, Sheffield (UK). *Talk presentation; Travel grant recipient.*

Awards and Recognitions

- **Google Cloud Research Credits Program.**
- **3rd Place, ISAC Data Analysis Competition, Travel grant awarded.** ISI World Statistics Congress, The Hague (Netherlands), July 2025.
- **PhD Scholarship**, University of Glasgow, 2022–2026.
- **Academic Scholarships**, Southwestern University of Finance and Economics, Chengdu (China), 2015–2019.

Academic Service

Journal Reviewer

Data-Centric Engineering (Cambridge University Press) *2025 - Present*

Seminar & Reading Group Organisation

Organize and host GLE^{2}N Seminar *2025 - Present*

Skills

Technical R, Python, C++, GitHub, Linux, MobaXterm, Conda

Document & Web LaTeX, R Markdown, HTML/CSS, Hugo, GitHub