

Dr. Callum Murphy-Barltrop

Independent Statistical Consultant at OpenEVT · Extreme Value Theory Expert

Dresden, Germany

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<https://openevt.org>

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<https://scholar.google.com/citations?user=9tHo2XcAAAAJ&hl=en>

PROFILE

Statistician specialising in extreme value theory (EVT), with a PhD, three years' of postdoctoral research, and experience collaborating with industry. As the founder of OpenEVT, I help organisations operationalise EVT, translating cutting-edge statistical research into practical solutions. I offer a wide range of services, including assistance with model development, code implementation, automated estimation procedures, and joint risk assessments. I also offer professional, bespoke training courses for EVT methodologies. Through my research, I have worked on a wide range of environmental applications, including flood and coastal risk, structural and offshore reliability, and catastrophe modelling. Track record of translating cutting-edge methods (including machine/deep learning approaches) into easy-to-use software and practical decision-making tools, including direct collaboration with government regulatory agencies.

CONSULTING & INDUSTRY EXPERIENCE

Founder, OpenEVT

2026 – Present

Freelance, Germany

- Founded my own independent statistical consultancy for EVT. Please visit <https://openevt.org> for details about our services.

Independent Statistical Consultant

2025 – 2026

Freelance, Germany

- Engaged by Fahrzeugsystemdaten (FSD) GmbH to develop statistical techniques for a regulatory problem.
- Managed the full consulting lifecycle independently: client scoping, technical delivery, documentation and reporting, and invoicing.

Research Associate, TU Dresden & ScaDS.AI

2023 – 2026

Institute of Mathematical Stochastics / Center for Scalable Data Analytics and AI

- Developed novel inferential methods for multivariate and non-stationary extremes, with emphasis on practical applicability to environmental and engineering data.
- Collaborated directly with practitioners and government agencies to translate statistical research into operational decision-making tools.
- Built and maintained open-source software implementing new methodology for public and industry use.
- Worked on many applications, including structural engineering reliability, flood risk management, financial stress testing, and joint metocean/offshore risk.

Environmental Statistician, Fathom

2022

Flood risk intelligence company, Bristol, UK · 6-month industrial placement

- Developed and implemented a statistical framework for modelling and simulating flood events across large spatial regions, used in commercial flood risk products.

SELECTED APPLIED PROJECTS & SOFTWARE

- SPAR / DeepSPAR – semi-parametric and deep-learning implementations of the SPAR framework for multivariate extremes, applied to metocean and discharge data sets.
- TAILS – automated, tail-informed threshold selection for extreme coastal sea levels.
- MultiHazard – R package for joint probability analysis of compound hazards.
- NSGE – modelling time-varying extremal dependence via machine learning, with application to financial data.

EDUCATION

PhD, Statistics (STOR-i Centre for Doctoral Training)

2019 – 2023

Lancaster University, UK · Sponsored by the Office for Nuclear Regulation (ONR). Multivariate extreme value theory applied to structural reliability and nuclear hazard assessment. Supervisors: J. Wadsworth, E. Eastoe.

MRes, Statistics and Operational Research

2018 – 2019

Lancaster University, UK · Distinction (81% average)

BSc (Hons), Mathematics, First Class

2015 – 2018

Lancaster University, UK · 94% overall average, recipient of David Astley Memorial Prize

TECHNICAL SKILLS

- Statistical methods: extreme value theory, multivariate dependence modelling, likelihood-based inference, nonparametric statistics, regression techniques, machine learning, artificial intelligence.
- Programming & tools: R, Python, MATLAB, Git/GitHub, LaTeX.
- Delivery: software package development, technical reporting and documentation, communication of statistical results to non-specialists.

SELECTED PUBLICATIONS (18 TOTAL – FULL LIST ON GOOGLE SCHOLAR)

- Murphy-Barltrop, C. J. R., Richards, J., Poschlo, B., Sasse, A., & Zscheischler, J. (2026). Exploring climate change effects on concurrent floods and concurrent droughts via statistical deep learning. arXiv preprint arXiv:2604.21647.
- Murphy-Barltrop, C. J. R., Mackay, E., & Jonathan, P. (2025). Inference for bivariate extremes via a semi-parametric angular-radial model. *Extremes*, 28(2), 209-238.