Touqeer Ahmad

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Research interests

Extreme value theory, conditional extremes, classical and Bayesian distributional regression, times series model for extremes, financial extremes, graphical models for extremal dependence, dimension reduction in conditional extremes, spatial extremes statistics, statistical learning and imbalanced data problems, designs of experiment, modeling of extreme environmental phenomena.

Current position

University of Oslo — **Oslo, Norway**
DSTrain Marie Skłodowska-Curie Actions (MSCA) Research Fellow — *November-2025–To date*
Collaborators: Thordis L. Thorarinsdottir

Past positions

Institute Denis Poisson, Université d'Orléans — **Orléans, France**
Research Fellow — *May-2025–October-2025*
Collaborators: Didier Chauveau & Sophie Jacquot

CREST, ENSAI — **Bruz, France**
Postdoctoral Researcher in Statistics — *May-2023–April-2025*
Collaborators: François Portier & Gilles Stupfler

Education

University of Padova — **Padova, Italy**
PhD in Statistics (with doctor of europeous label) — *Jan-2020–June-2023*
Thesis: On the modeling of discrete extreme values
Supervisor: Carlo Gaetan; **Co-supervisor:** Philippe Naveau

International Islamic University — **Islamabad, Pakistan**
MS Statistics (with gold medal + distinction + first position) — *2015–2017*

International Islamic University — **Islamabad, Pakistan**
MSc Statistics — *2013–2015*

Visiting periods

Le Laboratoire des Sciences du Climat et de l'Environnement (LSCE), — **Paris, France**
Jointly worked with Philippe Naveau — *2022*

Universit´e de Versailles Saint-Quentin-en-Yvelines - UVSQ, — **Paris, France**
Jointly worked with Julien Worms — *2022*

Research center for statistics, University of Geneva — **Geneva, Switzerland**
Jointly worked with Sebastian Engelke — *2023*

Research

Published Articles

1. T. Hasan and **Ahmad, T**., (2025).Order of Addition in Mixture-Amount Experiments. *Pharmaceutical Statistics (To appear)* https://doi.org/10.48550/arXiv.2410.04864
2. **Ahmad, T**, Kalan, M, M., Portier, F., Stupfler, G. (2025). Concentration and excess risk bounds for imbalanced classification with synthetic oversampling. *NeurIPS* (*To appear*).

3. Abbas, A., **Ahmad, T** & Ahmad I., (2025). Modeling zero-inflated precipitation extremes. *Communications in Statistics - Simulation and Computation* (*To appear*). https://doi.org/10.48550/arXiv.2504.11058
4. Shafique, U.R., **Ahmad, T** & Desheng W. D., (2025). Novel modeling for assessment of extreme values risk in cryptocurrencies portfolio. *Empirical Economics*, 1-28. https://doi.org/10.1007/s00181-025-02784-3
5. **Ahmad, T**. and Arshad I. A., (2025). New flexible versions of extended generalized Pareto model for count data. *Journal of Applied statistics* (*To appear*) https://doi.org/10.48550/arXiv.2409.18719
6. **Ahmad, T**. and Sabir S., Arshad I. A., Hasan T., & Albalawi O., (2025). Estimating Extreme Drought Risk Through Classical and Bayesian Paradigms. *International Journal of Climatology*,1-15. https://rmets.onlinelibrary.wiley.com/doi/epdf/10.1002/joc.8705
7. **Ahmad, T**., Gaetan, C., & Naveau P., (2024). An extended generalized Pareto regression model for count data. *Statistical Modelling* 1471082X241266729. https://doi.org/10.1177/1471082X241266729
8. Ahmad, I., **Ahmad, T**., Rehman, S. U., Almanjahie, I. M., & Alshahrani, F. (2024). A detailed study on quantification and modeling of drought characteristics using different copula families. *Heliyon* **10(3)**. https://doi.org/10.1016/j.heliyon.2024.e25422
9. Ahmad, I., **Ahmad, T.,** Shahzad, U., Ameer, M. A., Emam, W., Tashkandy, Y., & Badar, Z. (2024). An estimation of regional and at-site quantiles of extreme winds under flood index procedure. *Heliyon* **10(1)**. https://doi.org/10.1016/j.heliyon.2023.e23388.
10. **Ahmad, T**., Ahmad, I., Arshad, I. A., & Almanjahie, I. M. (2023). An efficient Bayesian modelling of extreme winds in favor of energy generation. *Energy Reports* **9(1)**, 2980–2992. https://doi.org/10.1016/j.egyr.2023.01.093
11. **Ahmad, T**., Ahmad, I., Arshad, I. A., & Bianco, N. (2022). A comprehensive study on the Bayesian modelling of extreme rainfall: a case study from Pakistan. *International Journal of Climatology*, **42(1)**, 208–224. https://doi.org/10.1002/joc.7240
12. Noor, F., Masood, S., Sabar, Y., Shah, S. B. H., **Ahmad, T.**, Abdollahi, A., & Sajid, A. (2021). Bayesian analysis of cancer data using a 4-component exponential mixture model. *Computational and Mathematical Methods in Medicine*, **2021(1).** https://doi.org/10.1155/2021/6289337/
13. Cheema, A. R., Firdous, S., **Ahmad, T.**, & Imran, M. (2021). Family planning and fertility reduction in Pakistan. *Ilkogretim Online*, **20(5)**, 3617–3627.https://ilkogretim-online.org/index.php/pub/article/view/5966
14. Ahmad, I., **Ahmad, T.**, & Almanjahie, I. M. (2019). Modelling of extreme rainfall in Punjab, Pakistan using Bayesian and frequentist approach. *Applied Ecology and Environmental Research*, **17(6)**, 13729-13748. https://doi.org/10.15666/aeer/1706_1372913748

Articles Preprints

1. **Ahmad, T**. and Portier F., & Stupfler G., (2024). Logistic lasso regression with nearest neighbors for gradient-based dimension reduction. https://doi.org/10.48550/arXiv.2407.08485
2. T. Hasan and **Ahmad, T**., (2024).Order of Addition in Orthogonally Blocked Mixture and Component-Amount Designs. https://doi.org/10.48550/arXiv.2410.22501
3. Rehman, S. U., **Ahmad, T**., Desheng, W D., & Karamoozian A., (2024). Analyzing selected cryptocurrencies spillover effects on global financial indices: Comparing risk measures using conventional and eGARCH-EVT-Copula approaches. https://doi.org/10.48550/arXiv.2407.15766

Articles in Progress

1. **Ahmad, T**., Gaetan, C., (2025). A latent process model for discrete temporal extremes.
2. Shafiq, U.R., **Ahmad, T** (2025).Modeling of financial risk through extreme value based neutral networks.
3. **Ahmad, T**, Saforah S., Shafiq, U.R. (2025). Bayesian modeling of drought extremes.

Conferences & Seminars

Invited Talks

1. **Ahmad, T**., Gaetan, C., & Naveau P., (2024). An extended generalized Pareto regression model for count data. *17th International Conference of the ERCIM Working Group on Computational and Methodological Statistics (CMStatistics2024)* King's College London, UK. Date 14-16 December 2024.
2. **Ahmad, T**., Hasan T., (2023). A flexible novel extension of discrete generalized Pareto distribution. *2nd International Conference on Recent Trends in Statistics & Data Analytics, National University of Science and Technology, Islamabad*. Date, 14-15 December 2023.
3. **Ahmad, T**., (2022). Modelling the entire range of discrete extreme data. *International Conference on Recent Trends in Statistics & Data Analytics, National University of Science and Technology, Islamabad*. Date, 23 September 2022.

Contributed Talks

1. **Ahmad, T**., & Portier, F., Stupfler, G., (2024). Local logistic regression for dimension reduction in classification. *International Symposium on Nonparametric Statistics (ISNPS 2024)*, Braga, Portugal. Date 25-29 June, 2024.
2. **Ahmad, T**., & Portier, F., Stupfler, G., (2024). Dimension reduction for binary classification problems. *Causality in Extremes Workshop and Mini-Courses*, University of Geneva, Geneva, Switzerland. Date 12-16 February 2024.
3. **Ahmad, T**., & Gaetan, C., (2023). A latent process model for discrete extremes. *13th International Conference of Extreme Value Analysis 2023 (EVA2023)*, Bocconi University, Milan, Italy. Date 26-30 June 2023.
4. **Ahmad, T**., Gaetan, C., & Naveau P., (2022). Modelling of discrete extremes through extended versions of discrete generalized Pareto distribution. *15th International Conference of the ERCIM Working Group on Computational and Methodological Statistics (CMStatistics)* King's College London, UK. Date 17-19 December 2022.

Seminars

1. **Ahmad, T**., (2022). Extreme value theory and its role in the modeling of rare events. *Department of Statistics, Allama Iqbal Open University, Islamabad, Pakistan*. Date, 28 Jan 2025.
2. **Ahmad, T**., (2022). Some new versions of discrete extreme models. *Laboratoire de Mathématiques de Versailles, Versailles, France*. Date, 19 April 2022.
3. **Ahmad, T**., (2022). Some new versions of discrete extreme models. *Department of Statistical Sciences, University of Padova, Italy*. Date, 17 February 2022.

Reviewer activities for journals

Journal of the Royal Statistical Society Series C, Econometrics and Statistics, Environmental and Ecological Statistics, Journal of Agricultural, Biological, and Environmental Statistics, Environmental Science and Pollution Research, Heliyon, International Journal of Climatology,

Teaching experience

ENSAI, **France**
Post doc *Sep-2023 to Dec-2024*
Courses Taught: *Introduction to Extreme Value Theory and Modeling, Introduction to R Programming*

Govt. of Punjab, Higher Education Department, **Rawalpindi, Pakistan**
Lecturer Statistics. *Feb-2018 to Dec-2023*
Courses Taught: *Introductory statistics, Statistical Theory I, Statistical Theory II, Statistics and Probability, Statistical Models*

Department of Statistics, AIOU **Islamabad, Pakistan**
Teaching Assistant *July-2016 to Jan-2018*
Courses Taught: *Statistical Methods, Nonparametric Statistics, Regression Analysis, Econometrics and Research Methodology*

Supervising experience

2024 (PhD co-supervision): Classical and Bayesian Modeling for Droughts Risk Assessment. Sumaira Perveen

Awards & Grants

ENSAI, CREST, GENES **Bruz, France**
Règion Bretagne SAD-2021-MaEVa grant for Post Doc *May-2023 to April-2025*

University of Padova **Padova, Italy**
CARIPARO Research Grant for PhD *Dec-2019 to Mar-2023*

International Islamic University **Islamabad, Pakistan**
Awarded Gold Medal in MS *March-2019*

International Islamic University **Islamabad, Pakistan**
Awarded Laptop by Prime Minister Laptop Scheme *August-2015*

Competitive Exams

Ministère de l'enseignement supérieur et de la recherche **France**
Qualified Maître de conferences, 2025 examination for assistant professor at French universities *March, 2025*

Punjab Public Service Commission, **Lahore, Pakistan**
Passed the competitive exam for lecturer in Statistics at HED Punjab *August-2017*

Other

Languages: Urdu (native), Punjabi (native), English (advanced), Italian (basic), French (basic).
Technologies: R (advanced), Python (intermediate), C++ (advanced), Julia (basic), LaTex (advanced).

Referees

1. **Prof. Carlo Gaetan**
Department of Environmental Sciences, Informatics and Statistics, Ca' Foscari University of Venice, Italy.
E-mail: gaetan@unive.it **Phone:**(+39)-412-348-404

2. **Prof. François Portier**
Department of Statistics, CREST, ENSAI, France.
E-mail: francois.portier@gmail.com **Phone:**(+33)-766-138-179

3. **Prof. Irshad Ahmad Arshad**
Department of Statistics, Allama Iqbal Open University, Islamabad, Pakistan.
E-mail: irshad.ahmad@aiou.edu.pk **Phone:** (+92)-333-518-180-7