

Generative AI Modelling for Extreme Events: Statistical Foundations (GAMEX)



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Abstract

Extreme events such as floods, heatwaves, and other climate-related hazards are increasing in both frequency and severity, creating urgent challenges for risk assessment and decision-making. At the same time, modern data collection technologies generate vast, high-dimensional datasets that exceed the capabilities of traditional statistical approaches. The GAMEX project (Generative AI Modelling for Extreme Events) addresses these challenges by bridging generative artificial intelligence (AI) and extreme value theory (EVT) to develop scalable, interpretable models for the analysis and prediction of rare, high-impact events.

Through methodological innovation and interdisciplinary collaboration, GAMEX lays the groundwork for a research community operating at the intersection of AI, statistics, and risk modelling. The project actively engages early-career researchers and promotes institutional exchange through a coordinated programme of scientific and training activities. The consortium brings together partners from five universities across Europe and Latin America, reflecting a shared commitment to advancing extreme event modelling while, at the same time, fostering international academic collaboration.



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Participating institutions

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Third parties

Pontificia Universidad Católica de Chile



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Budget

€ 39.274

