Resilience Towards Compound Risks: Open Problems and Potentials for Al Techniques

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Engineering and Physical Sciences Research Council



Trustworthy **Autonomous Systems Hub**

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Motivation

- Society is vulnerable to extreme climate change events.
- We are facing simultaneous and interrelated risks (e.g., extreme



flooding and cyclones during pandemics).

• Our risk management and resilience governance methods are not effective for dealing with compound risks.

Three Phases of Resilience Governance



Towards a Roadmap for **Design and Development** of Al-assisted Resilience **Governance Systems**

Potentials for AI Techniques

• Data-driven learning techniques for machine resilience assessment.

• Simulation-based AI methods for policy appraisal in view of compound risks.

Case Study: Prefrence Modeling for Policy Appriasal



Al-based resilience coordination mechanisms tor

implementation.



Scan the QR code for more details on the ARGOS project. (AI-assisted Resilience Governance Systems (ARGOS) is a pump-priming project supported by UKRI's research hub for Trustworthy Autonomous Systems)

Applying computational Fuzzy Cognitive Maps for preference elicitation showed that, among a set of interventions, "risk communication" is the most impactful action for supporting flood resilience in Lowestoft, UK.







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