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RescueMate – Rethinking Innovation in Natural Disasters: Building an AI & Data Platform to Better Deal with Storm Surges

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Building an AI & Data Platform to Better Deal with Storm Surges

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A consequence of drastic climate change is increased extreme weather events (Coumou and Rahmstorf 2012). One of those is storm surges. Hamburg, Germany, is well-known for its dramatic storm surges in 1962, with over 280 deaths (de Guttry and Ratter 2022). Since then, the measures taken to prevent disasters and cope with the weather have matured. Nevertheless, the application of state-of-the-art information systems falls short.
The project RescueMate seeks to implement a platform that enables the aggregation of publicly available data, sensor data and governmental sources. This platform allows the distributed use of artificial intelligence to support the needs of a plethora of actors that aim to improve safety throughout the disaster. Such instances are law enforcement, firefighters, ministries, or civil society like the red cross and others. All these actors do have information systems in place to manage their resources. They also have access to several real-time data, but an integrated perspective is missing.
Within the project, we aim to develop a user-oriented platform that enables a broad range of functionalities to support broader risk management for natural disasters. Specifically, we seek to implement several technical demonstrations that showcase the utility of such a data platform that enables the comprehensive use of artificial intelligence. These encompass developing novel sensor networks to meet information needs by authorities. I.e. to assess the status of dykes and if soaking is happening. Such sensors provide valuable data in case of disasters. Additionally, drones can be used to inspect critical infrastructures or to identify objects or people that are affected by the storm surge. Furthermore, the platform aims to guide crisis committees on different local and state-wide levels to respond adequately. Therefore, larger operations like evacuations can be planned, and if feasible, tools will be developed to support NGOs that operate locations for evacuees.
The project is planned to be interdisciplinary by a broad team of researchers, major actors of public safety, as well as software firms, and infrastructure providers. Due to the close anchoring in practice, all artefacts developed will be demonstrated and evaluated in the field with long-term demonstrations as well as integration into real-world-disaster training.

References

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