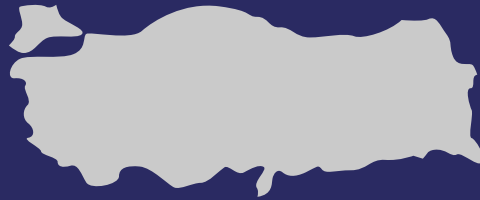




LIFESAVING EARTHQUAKE RISK AND RESILIENCE SOFTWARE DEVELOPED FOR BUILDINGS

Simurg Resilience

Türkiye



Vesile Hatun Akansel

Many buildings may have hidden structural defects, which Simurg Resilience's Software as a Service platform aims to identify through descriptive and technical data input including the number of floors, soil type, and construction methods. Using Deep Tech, the platform calculates risks, likely weaknesses, and even potential casualty levels, with preliminary assessments enabling pre-emptive mitigation strategies or more detailed analysis.

Simurg Resilience's work correlates with UN Sustainable Development Goals, seeking resilient and reliable infrastructure, as well as making human settlements safe and resilient. It also contributes towards a strengthened capacity for early warning systems, and the management of national health risks.

As well as its core function, the software serves as a data management system for municipalities, governments, and civil engineering firms. It was originally developed by a team of just three people, with Vesile and a civil engineer now building relationships with universities and government departments. This pioneering work additionally ties into the Sendai Framework for Disaster Risk Reduction, and could enable countries around the world to prepare comprehensive risk plans.





There were over 15,000 earthquakes worldwide during 2023, and almost 60,000 people lost their lives to the earthquakes which hit Türkiye and Syria in early 2023. Turkish engineer Vesile Hatun Akansel is reducing the impact of future tragedies through his cutting-edge earthquake risk and resilience detection software. Her deep-tech powered structural analysis tool runs on any internet-enabled device, calculating the risk of individual buildings suffering earthquake damage. This enables developers and owners to mitigate against structural weaknesses, or the risk of potential collapse.

“LIF led me to understand the missing part in my entrepreneurship journey,” says Vesile. She acknowledges the value of meeting other entrepreneurs from around the world: “Because it’s international, you understand how other entrepreneurs solve their problems, showing you that you’re not alone.” This was also a key benefit of the programme’s mentoring element: “Whenever I have a problem, my mentor is very open to sharing her opinions and helping me decide what to do. LIF gives you the chance to understand how the business paths match with scientific problem solving.”

Vesile’s long-term plan includes the commercialisation of Simurg Resilience’s software in Türkiye, preceding an international rollout to help other quake-prone nations develop their Sendai Framework hazard risk mitigation plans. Aimed at B2B and B2C audiences alike, the software could ultimately evolve into a multi-hazard scenario tool which covers separate natural disasters like floods, and could even predict post-earthquake impacts such as tsunamis or power cuts.

The Royal Academy of Engineering’s Leaders in Innovation Fellowships (LIF) programme supports talented entrepreneurs from around the globe to turn their engineering innovations into impactful, sustainable businesses.

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