AI for crisis teams - DFKI develops pandemic cockpit for municipalities

- DFKI launches new project for crisis management in the COVID-19 pandemic - Clear presentation of relevant data and simulations - New opportunities for science-based assistance for municipalities

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How do measures affect pandemic response at the municipal level? - In the AScore project, an expert system is being developed that presents crisis teams and decision-makers with needed simulations and information on pandemic progression for the municipal level. The project, which is funded by the German Federal Ministry of Education and Research (BMBF), is being carried out by scientists at the DFKI Kaiserslautern branch office at the University of Trier.

Despite now numerous experts, new research projects and a lot of available information on the Internet, it is difficult to assess where we are in the COVID-19 pandemic. Are the measures appropriate, excessive or insufficient? When can measures be relaxed? How do we get the schools back on track?

"Especially at the municipal level, at the health departments and the local crisis teams, there is a need for simulation options to better assess possible courses of events and decide on measures," says Prof. Ingo Timm, head of the Cognitive Social Simulation group at the DFKI branch office in Trier. "We have already been working since March of last year on computer models for analyzing and evaluating measures to contain the pandemic while taking human behavior into account."

DFKI is cooperating closely with the Fraunhofer Institute for Industrial Mathematics (ITWM) and the city administrations in Kaiserslautern and Trier. "The COVID-19 simulation systems from ITWM and DFKI complement each other perfectly to assess measures to contain the pandemic." Prof. Dr. Karl-Heinz Küfer, division manager "Optimization" at Fraunhofer ITWM in Kaiserslautern, emphasizes. The innovative approach in the AScore project is based on the preliminary work of the two institutes.

A cockpit for crisis teams

The goal of AScore is the clear presentation of information relevant for crisis management in a dashboard. Using previously defined models, the further course of the pandemic can be simulated for one's own municipality using current data. "We are now using Artificial Intelligence to bring together data, analyses and information in a kind of cockpit. The aim is to provide those responsible for crisis management with decision-relevant information as needed," says Dr. Jan Ole Berndt, technical project manager at DFKI in Trier.

Dr. Clemens Gause, Managing Director of the Verband für Sicherheitstechnik (VfS), an association for safety technology involved in the project: "Municipalities are playing an increasingly important role in pandemic crisis management. For them in particular, the AScore project has great potential, because concrete tools for managing the crisis are being developed here."
Sustainable research - learning from the crisis

"In addition to helping manage the current pandemic, we want to understand in the long term what information needs the crisis staffs have," adds Prof. Ingo Timm. "Later, using machine learning techniques, for example, we would like to use the data to explore which measures were effective and how, and thus learn for future crises."

In addition to the DFKI, with the Smart City Living Lab (SCLL) in Kaiserslautern and the Cognitive Social Simulation topic area of the branch office at the University of Trier, the Fraunhofer ITWM, the city administrations of Kaiserslautern and Trier, the Association for Safety Technology e.V. (VfS) as well as the companies CID GmbH and mata:solutions GmbH are involved.

The AScore project is funded by the German Federal Ministry of Education and Research (BMBF) as part of the German government’s “Research for Civil Security" program and started with a virtual kick-off meeting in January.

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