Rice University software helps ID terrorists carrying out attacks

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Rice University researchers have created a sophisticated new computer program that rapidly scans large databases of news reports to determine which terrorists groups might be responsible for new attacks. During the Thanksgiving Day attack in Mumbai, India, for example, researchers used the program to rapidly identify the Pakistan-based Lashkar-e-Tayyiba as the most likely culprit.

Rice researchers say the U.S. intelligence community and foreign intelligence agencies no doubt make good use of sophisticated computing tools in sifting through the massive amount of information available on terrorists, but a problem remains in the human capacity to absorb all of that information.

"There's an enormous amount of value in using computing to profile conflicts," said Christopher Bronk, fellow in technology, society and public policy at Rice's Baker Institute for Public Policy and development team member. "While experts on conflict are essential, they need new tools for coping with information overload. That's what we're trying to provide."

Bronk said even the best-funded intelligence operation cannot watch everything all the time. The Rice project demonstrates that information technology may help determine where to look. From that, human effort can be directed to make more complete assessment and analysis.

Bronk said he hopes to perfect a system that can assist the government in

identifying future "hot spots" of activity before violence occurs.

The new software, which was designed using the latest techniques from artificial intelligence, takes advantage of the open-source database at the Institute for the Study of Violent Groups (ISVG) at Sam Houston State University. The program culls thousands of news stories reported throughout the world.

Mumbai attack

On Thanksgiving Day, as the attacks unfolded in Mumbai, India, Sean Graham, an undergraduate program assistant at Rice, ran a series of queries based on the information reported by television networks. By entering the weapons used (machine guns, grenades and explosives), the target (public structures) and tactics (raid, direct fire and ambush), and without respect to any geographic or ideological bent, he essentially asked, "Who in the world has done this sort of thing before?" The answers were the expected ones, with al-Qaida at the top of a list that also included the Liberation Tigers of Tamil Eelam, the Palestinian militant group Hamas, a Chechen independence group and the India-based United Liberation Front of Assam. This query provided a simple answer to the question of who might be able to pull off such an attack, regardless of geographic location.

Researchers then focused on groups known to be active in South Asia. Keeping the query open to territory beyond India, including Afghanistan and Sri Lanka, they generated a list of names that included Pakistan-based Lashkar-e-Tayyiba, the Bangladeshi Jamaat-ul-Mujahideen and Al-Mansoorian, a group active in Kashmir. By running extremely simple queries against the large, detailed ISVG database, which had no new content added in the immediate period before the Mumbai attacks, the research group came up with the same groups mentioned as likely suspects in Indian, U.S. and other international media. When they ran the

queries against a second database constructed by researchers at the University of Maryland, Lashkar-e-Tayyiba was returned as the most likely culprit.

"We designed the software to better assign attribution in terror attacks, and it appears to have worked," said Bronk. "It allowed us to match signatures and say, with some confidence, what groups had the requisite experience, resources and coordinating factors to pull off the Mumbai attacks."

To read the complete paper, visit [www.bakerinstitute.org/opinion … formation-technology](www.bakerinstitute.org/opinion)

Source: Rice University

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