STOP terrorism software

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Researchers at the University of Maryland's Institute for Advanced Computer Studies (UMIACS) have developed the SOMA Terror Organization Portal (STOP) allowing analysts to query automatically learned rules on terrorist organization behavior, forecast potential behavior based on these rules, and, most importantly, to network with other analysts examining the same subjects.

SOMA (Stochastic Opponent Modeling Agents) is a formal, logical-statistical reasoning framework that uses data about past behavior of terror groups in order to learn rules about the probability of an organization, community, or person taking certain actions in different situations.

In a unique collaboration between computer scientists and political scientists, SOMA has generated tens of thousands of rules about the likely behavior of each of about 30 groups (including major terrorist organizations such as Hezbollah, Hamas, and Hezb-I-Islami).

"SOMA is a significant joint computer science and social science achievement that will facilitate learning about and forecasting terrorist group behavior based on rigorous mathematical and computational models," said V.S. Subrahmanian, computer science professor and UMIACS director who heads the STOP project. "But even the best science needs to work hand in hand with social scientists and users. In addition to accurate behavioral models and forecasting algorithms, the SOMA Terror Organization Portal acts as a virtual roundtable that terrorism experts can gather around and form a rich community that

transcends artificial boundaries."

Funded by the Air Force Office of Scientific Research, the SOMA Terror Organization Portal currently has users from four defense agencies. The users, in addition to performing queries and running a prediction engine, can mark rules as useful or not useful and leave comments about the rules. They can learn what others have found useful and identify interesting rules and comments to. In combating asymmetric threats like terrorism, this last feature is particularly important according to Aaron Mannes, UMIACS researcher and author of "Profiles in Terror: The Guide to Middle East Terrorist Organizations" (Rowman & Littlefield 2004).

"Security analysts need more than piles of data." Mannes explained, "It takes a network to fight a network. Analysts need to learn from other analysts. This system allows multiple users to arrive at a shared understanding of how a terror group operates and what it might do in the future. Using the queries analysts can examine the underlying data and then, using the forecasting capabilities, test their theories."

The University of Maryland and its Institute for Advanced Computer Studies are involved in a broad array of interdisciplinary research to improve the nation's security and combat global terrorism. This includes intelligence and security research conducted by the Center for Advanced Study of Language and the new Intelligence Advanced Research Projects Activity (IARPA), both based at the university; and the Human Language Technology Center of Excellence, a joint center of the Johns Hopkins University and the University of Maryland that is funded by U.S. Department of Defense. The University of Maryland' is also home to the National Consortium for the Study of Terrorism and Responses to Terrorism (START) developer of the Global Terrorism Database, the world's largest unclassified database of terrorism attacks.