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Posted on Mon, Aug. 02, 2004

Defense Dept. hopes to enlist AI in war against terrorism

By [Therese Poletti](#)
Mercury News

The world's most popular search engine, Google, uses artificial intelligence to respond to millions of queries a day. Banks now depend on artificial intelligence to alert customers to odd patterns of credit card use. And many video game developers rely on AI to develop life-like characters.

After its own boom-and-bust cycle in the 1980s, the esoteric field of artificial intelligence gradually has developed some real-life uses of software that teach machines to think

And now the war on terrorism is boosting AI research with an infusion of cash. The Defense Department hopes an elite group of AI scientists will develop more tools to help intel analysts find terrorists before they strike.

At an artificial intelligence conference in San Jose last week, several groups of university researchers presented papers on work they have done in the area of counter-terrorism

Their projects show that it is possible to use AI techniques in tracking down terrorist researchers said their work was in the early stages, with some projects waiting for new funding.

"People have too much information," said Peter Jarvis, a principal software engineer at the Ames Research Center, describing the job of a typical intelligence analyst at the CIA. "We developed technology to have the machine sort through this stuff."

Jarvis and researchers at SRI International and the Palo Alto Research Center used pattern recognition techniques to show that it was possible to spot odd relationships in data.

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In one research project, computers had access to multiple databases, some that had information and some that contained clues for an agent to investigate. The system c pile of alerts created for the study and produced a cluster of data it believed was link

The system then recommended that the agent look into a series of events: a missing report filed on an industrial worker, a blueprint of the switches to a dam found on an computer, and hacking tools found on other Al-Qaida computers.

`` You could put that together to say that the terrorists were possibly planning to att Jarvis said, adding that government agents could spend more time investigating actu rather than spending all their time studying data.

He said the system was capable of handling up to 20 alerts. Because the researchers real, classified information in their project, they had to use so-called synthetic data t developed by experts.

Jarvis added that the project was probably about five years from commercialization. Advanced Projects Research Agency provided the initial funding for the project and t community is showing an interest in the work.

`` Research funding has been going up in the past two to three years," said Jaime C: director of the Language Technologies Institute at Carnegie Mellon University.

The spike in AI funding is due in part by the need for homeland security applications

The military also is driving research. The Institute for Creative Technologies at the U Southern California demonstrated a video game that was developed for the U.S. Arr designed the game, called Full Spectrum Command, to help train commanders in pla missions.

The commander-in-training gives orders to computer-controlled soldiers, who then a military plan based on the artificial intelligence system built into the game.

But even with more funding, AI is still far from creating machines that can talk or thi humans.

For example, the Mars rovers traveled on average 10 meters in 10 days, dependent sent from humans on Earth. NASA hopes to add more intelligence to the next genera that will go to Mars in 2009. That would enable the rovers to autonomously plot their and respond to obstacles.

At the San Jose AI conference, a `` roboceptionist" named Grace developed by Carn researchers showed how far the field has come and how far it has to go.

Grace was supposed to help conference-goers with directions to restaurants and oth After receiving several queries with the word `` restaurant", she only would respond `` Where can I go eat?" and gave the address of the Arcadia Restaurant in the Marri to the convention center.

Another time, she sensed some curious onlookers. `` Instead of just staring at me yc something on the keyboard" she intoned in her computer-drone voice.

Bill Smart, an assistant professor at Washington University in St. Louis, said machine toughest task for AI researchers.

`` It's still the early days," he said.

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