

Complex math formulas the solution for national security

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LOVELAND - Complex math formulas, known as algorithms, are showing up in all kinds of places from traffic light controls to anti-spam filters, but this week's Colorado Company to Watch is using them to protect national security.

Long before Google used algorithms to search through Internet content or iTunes used them to develop Genius Lists for users, Colorado State University Professor Aubrey Poore was looking for ways to make the formulas work for the military and other industries.

During his research he created an award-winning and patented technology, which takes all of the information gathered by the military's sensors in space, the air and on the ground, crunches the numbers and identifies threats in real time.

"[Our software] provides advanced situational awareness to military commanders so they understand what's going on in space, on the ground as to the target," Poore's son Jeff said.

Jeff Poore, who helped bring the technology to the defense industry through the creation of the Numerica Corporation in 1996, says the advances revolutionized the Global Missile Defense network, enabling commanders to respond more quickly.

"Before this innovation, it wasn't possible to work with that data in real time," Jeff Poore said. "Systems were too slow."

Another challenge was coming up with a way to separate real targets from harmless distractions. Numerica Corporation's algorithms can identify an enemy missile, while factoring out things like birds or clouds.

In the last 14 years, the company has continued to improve its algorithms and software. In fact, recently Numerica Corporation was chosen by Northrop Grumman to work on a \$600 million military contract to build the next generation of this technology.

The Integrated Air and Missile Defense Battle Command System (IBCS) will be a network system, not only integrating sensors with communication and command instruments, but also the Army's weapons. Patriot, SLAMRAAM, JLENS, Sentinel and THAAD defense systems will all be interconnected through the software.

After it is fielded in 2014, the IBCS system will continue to evolve allowing the military to add new sensors and weapons in what Northrop Grumman calls a "plug-and-fight" approach.

For more on the Integrated Air and Missile Defense Battle Command System project, visit <http://www.is.northropgrumman.com/IBCS/>.

Jeff Poore says Numerica is proud to be contributing to the country's national defense. Plus, he says the challenges of creating such a missile shield makes for some "really cool math and science problems."

Numerica Corporation was recently selected as one of the 50 Colorado Companies to Watch by the Colorado Office of Economic Development and International Trade. Every Friday 9NEWS reports about another company, highlighting its success in this difficult economy.

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