

An Unconcealed Success Story

McMaster Team Honors Weapons Detection System

McMaster University



Deter. Detect. Defend.

That's the motto of Patriot One Technologies Inc., an Ontario company that's come up with a revolutionary way of spotting concealed weapons—quickly and unobtrusively.

Not surprisingly, the security world is keen to know more. Schools and police forces are among those expressing interest.

The technology was developed over eight years by a McMaster University team headed by professor Natalia Nikolova, an expert in high-frequency electromagnetics. It combines short-range radar with machine learning algorithms to scan passersby for guns, knives, grenades and other threatening objects.

Each Patscan Cognitive Microwave Radar unit is about the size of a brick, so it can be easily hidden in walls, turnstiles and other high-traffic areas. As people pass the sensor, an antenna emits electromagnetic radiation pulses. Some of that energy bounces back to a second Patscan antenna and is analyzed to determine its source.

“We call it an object’s radar signature,” said Nikolova. The technology is particularly proficient with metal detection. In tests, accuracy readings have topped 90 percent. “The computer can actually tell what sort of metallic object is on your body,” she said. It also can take a photo of a person being scrutinized.

“*The first-of-its-kind Patscan system has been certified by both Industry Canada and the U.S. Federal Communications Commission, paving the way for a phased commercial rollout. Interest and orders have been received from around the globe, and Patriot has licensed six international patent applications.*

“Initial feedback from our pilots [program] and ... leading customers is that this is going to be quite disruptive, quite transformative” in enhancing security, said Dinesh Kandanchatha, Patriot One’s chief technology officer. The company and McMaster are working to extend the device’s range beyond three metres.

A major selling point is that people pass by the sensor unaware of its existence. “People are prepared to give up a measure of convenience for safety,” said Patriot One CEO Martin Cronin. “But people don’t want to live in a fortress.”

With Patscan, they don’t have to. Life seemingly goes on as normal—even in these uncertain times.

“Essentially this is about saving lives,” said Cronin. “Patriot One technology will save lives.

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