Swiss develop algorithm to trace virus sources

Researchers at the Federal Institute of Technology in Lausanne (EPFL) have developed an algorithm which is capable of detecting the source of malicious information circulating on networks.

The software can detect the origin of rumours and misinformation, computer viruses or trace terror suspects, researcher Pedro Pinto said on Friday, adding that the system could prove to be a “precious ally” for criminal investigators.

Algorithms are widely used to solve complex computer-based problems.

“Our algorithm is capable of recreating in the reverse the path travelled by the information and returning to its source,” Pinto said, adding that he had successfully tested the software on a number of different problems.

For example, using the telephone communications linked to the planning of the September 11, 2001 attacks on the World Trade Centre and information published in the press, Pinto said the system came up with three suspects, one of whom was the actual ringleader of the attacks.

He said the software had also successfully tracked the author of a rumour circulating amongst 500 members of a network by examining the messages of just 15 to 20 of those members.

It was also used to find the origin of an infectious disease in South Africa, he said.

“By modelling the network of water circulation, rivers and human transports, we were able to pinpoint the place where the first cases appeared,” Pinto said.

The details of the algorithm are published today in the scientific journal Physical Review Letters.

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