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Doubt cast on fingerprint security



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Fingerprints are surprisingly easy to fake

Fake fingers made out of common household ingredients can fool security systems that use fingerprints to identify people.

The artificial fingers and prints were created with gelatine by Japanese researchers who used the digits to trick biometric systems into thinking they were seeing the real thing.

“If he could do this, then any semi-professional can almost certainly do much, much more”

Bruce Schneier, security expert

Not only was it possible to fool the security systems with casts of fingers, the researchers found they could make convincing fakes using fingerprints lifted from glass.

Experts say the experiments cast serious doubt on any claims that this type of biometric system can be made fully secure.

'Impressive work'

The work was done by engineering professor Tsutomu Matsumoto and his colleagues at the Graduate School of Environment and Information Sciences at the University of Yokohama.

The first set of experiments used fake fingers formed when gelatine was poured



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into a mould created by pushing a finger into a malleable plastic often used by model makers.



The fingers created this way fooled the fingerprint readers 80% of the time.

Household ingredients can help fool fingerprint detectors

Making the fingers took only a few minutes and used raw materials that cost less than £10. The researchers also developed a way to create fake fingers using prints left on glass.

First, the latent print was hardened using glue that sticks to the ridges of bodily detritus, such as sweat and skin cells, left behind when a finger touches a hardened surface.

'Impressive' work

This improved print was photographed using a digital camera and was then enhanced using Adobe Photoshop software to emphasise the difference between its ridges and gaps.

The image was transferred to a photosensitive sheet, etched into copper to turn it from a flat image into a three-dimensional print, and then used to create another mould.

Again the fake fingers fooled the biometric readers 80% of the time.

Security expert Bruce Schneier wrote of Dr Matsumoto's work: "Impressive is an understatement."

He said the fact the systems were fooled using easily available ingredients should be enough to end the use of fingerprint-based security systems.

"If he could do this, then any semi-professional can almost certainly do much, much more," wrote Mr Schneier.

Dr Matsumoto and his colleagues first presented their work in January at the Electronic Imaging 2002 conference organised by the International Society for Optical Engineering.

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