Fingerprinting

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What is a fingerprint?

Fingerprints are an early example of biometrics, the science of identifying individuals by their physical characteristics. There is no clear date at which fingerprinting was first used, some examples being from prehistory. However, some significant modern dates are as follows.

- 1880 - Dr Henry Faulds published his first paper on the subject in the scientific journal Nature in 1880. Returning to Britain in 1886, he offered the concept to the Metropolitan Police in London but was dismissed.
- 1901 - Sir Edward Richard Henry devised the Henry Classification System used in England and Wales.
- 1902 - Dr. Henry P. DeForrest used fingerprinting in the New York Civil Service.

There is some controversy over the uniqueness of fingerprints. Even those who accept their uniqueness sometimes argue that the techniques used to compare fingerprints are fallible.

Fingerprint analysis (or **Dactylography**, a term mainly used in the US) is the science of using fingerprints to uniquely identify someone. Humans leave behind prints of the ridges of the skin on their fingertips when handling certain materials. The pattern of ridges is thought to be unique for each person and in practice has proved unique enough to identify the person who left the fingerprint.

Fingerprint analysis emerged in the early 20th century, when it was the first method in forensic science for unique identification. As a result of its early success, it acquired a mystique of infallibility. It has only recently been subjected to systematic analysis by investigators from outside the field.

Fingerprint examiners have certainly disagreed with one another: the case of Shirley McKie was a notable case involving fingerprints.

What is the technology involved?

Sometimes the prints are invisible, in which case they are called latent fingerprints, but there are chemical techniques such as cyanoacrylate fuming and ninhydrin spray that can make them visible.

Recently the American Federal Bureau of Investigation adopted a wavelet-based system for efficient storage of fingerprint data, developed by Ingrid Daubechies.

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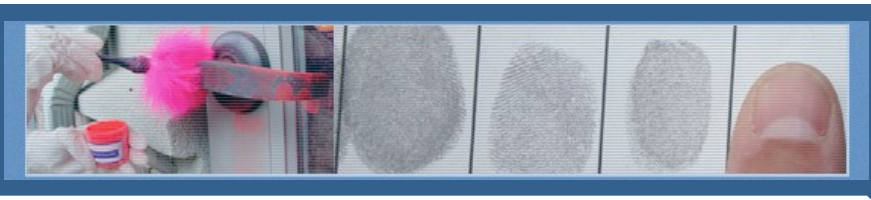

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What does the future hold for fingerprinting technology?

In the 2000s, electronic fingerprint readers have been introduced for security applications such as identification of computer users (log-in authentication). However, early devices have been discovered to be vulnerable to quite simple methods of deception, such as fake fingerprints cast in gels.

Future application of this technology range from computer access to office and home security to automobile locks.

Example of a personal fingerprint scanner:

More Information:

- http://www.barcode.ro/tutorials/biometrics/fingerprint.html
- http://www.clpex.com/animation.htm
- http://www.ridgesandfurrows.homestead.com
- http://www.edcampbell.com/PalmD-History.htm
- http://www.fingerprints.tk
- http://www.cbdiai.org/Reagents/main.html
- http://www.xs4all.nl/~dacty/pores.htm
- http://perso.wanadoo.fr/fingerchip/biometrics/types/fingerprint.htm