Chapter 15 - Biometrics

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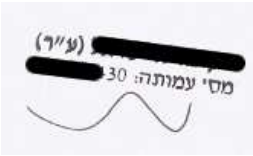
- Biometrics identify people by measuring some aspect of individual anatomy or physiology.
- Gileadites, Jacob, etc.
- US-VISIT program, Europe's Schengen visa, IDF, MOT, PIBA.
- Signatures, face recognition, fingerprints, iris codes, voice recognition.
- 1.5 Billion USD in 2005.

http://www.kdati.org.il/shibbolet/info/gemel/gemel-main.htm

Signatures

- Very weak authentication mechanism.
- Who is liable?
- How do we verify signatures?
- What is a signature?



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Signatures - Cont.

- Yet, it works in practice.
- Automation verification doesn't.
- fraud and insult rates.
- The equal error rate.
- Computer assisted decision.

Face Recognition

Taken from Yediot Ahronot

- We recognize each other. Yet, computers do not easily recognize us.
- How? Can computers do it?
- Can we recognize strangers?

Personal Album

Face Recognition

Face Recognition - Cont.

- Does it work?
- Is it useful?
- Face recognition accounts for 19% of the market.

Fingerprints

- Like calculus, fingerprint were discovered by more than one person.
- Black list or white list?
- Equal error rate of 1%.
- Forensics?
- Does it work?

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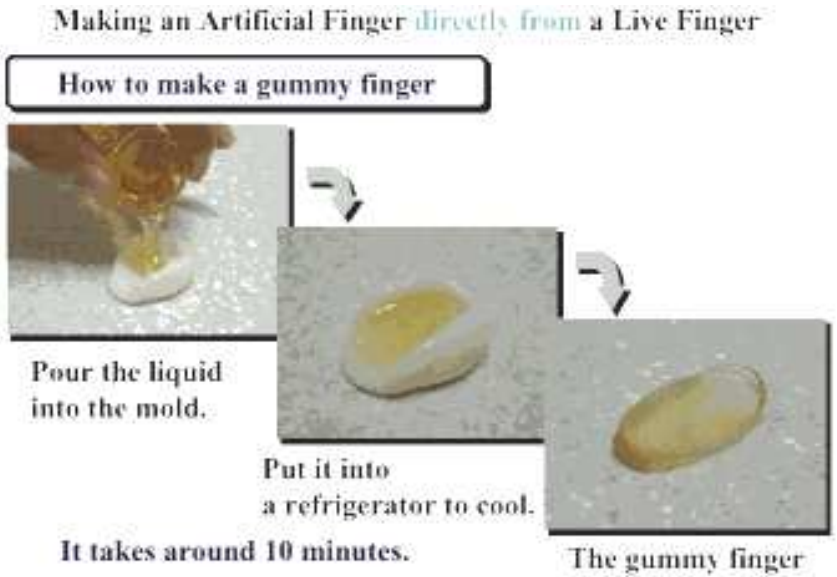
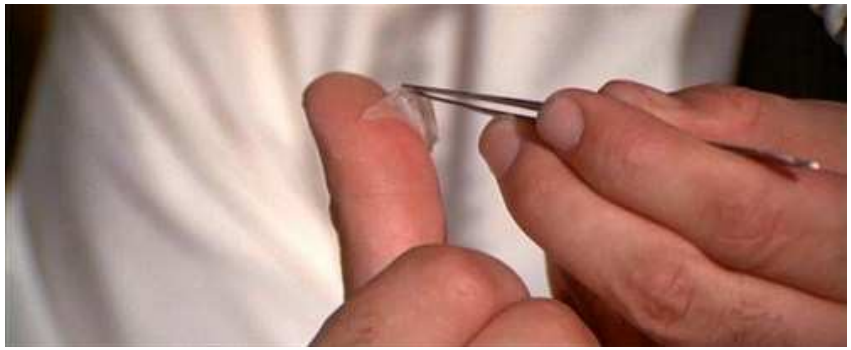
http://commons.wikimedia.org/wiki/File:Fingerprintonpaper.jpg

Fingerprints - Cont.





Fingerprints - Cont.

- Can computers do it?
- Accounts for 43.5% of the market.

Iris Codes

- Does it work?
- How does it work?
- Can it be manipulated?
- Can computers do it?

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http://commons.wikimedia.org/wiki/File:Blue-greyEyes.png

Voice Recognition

- Does it work?
- How does it work?
- Can it be manupulated?
- Can computers do it?