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.
Signatures

- Very weak authentication mechanism.
- Who is liable?
- How do we verify signatures?
- What is a signature?
Yet, it works in practice.
Automation verification doesn’t.
Fraud and insult rates.
The equal error rate.
Computer assisted decision.
We recognize each other. Yet, computers do not easily recognize us.

How? Can computers do it?

Can we recognize strangers?
Does it work?

Is it useful?

Face recognition accounts for 19% of the market.
- Like calculus, fingerprint were discovered by more than one person.
- Black list or white list?
- Equal error rate of 1%.
- Forensics?
- Does it work?
Fingerprints - Cont.

Making an Artificial Finger directly from a Live Finger

How to make a gummy finger

Pour the liquid into the mold.

Put it into a refrigerator to cool.

It takes around 10 minutes.

The gummy finger
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?

[Image: Blue-greyEyes.png (CC0)]

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Voice Recognition

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