

# Biometrics

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# Overview

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# What is Biometrics?

Biometrics are measurements and calculations related to the unique characteristics of a person. Biometrics are used in computer science for identification and can be referred to as biometric authentication.

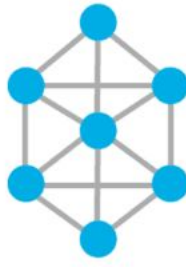


Fingerprint  
scan

Extracting  
unique  
biometric  
features

Mapping  
unique  
biometric  
features

The biometric  
template:  
a binary  
representation  
of unique  
features



```
1101011101000
0101001101001
1011101001110
1101011101000
0101001101001
1011101001110
1101011101000
0101001101001
1011101001110
```

Via Loss Prevention Magazine

# History

- 1800s: First biometric identification system recorded in Paris, France
- 1880s: Fingerprint identification
- Early 1900s: “Biometric Boom”
- 1960s: Semi-automated facial recognition
- 1980s: National Institute of Standards and Technology studied and pushed processes for speech recognition technology
- 1985: Iris recognition technology
- 1991: Real-time facial recognition developed

- Though the first recorded biometric identification system was from the 1800s, accounts of biometrics go back to 500B.C.
- Fingerprinting in the 1880s were used to identify criminals and as a form of signature.
- Research in biometrics grew in the early 1900s and saw many advancements.
- In the 1960s, facial recognition systems used an image to analyze facial features.
- Now, biometric technology is everywhere— hundreds of systems are patented and used in many areas of life.

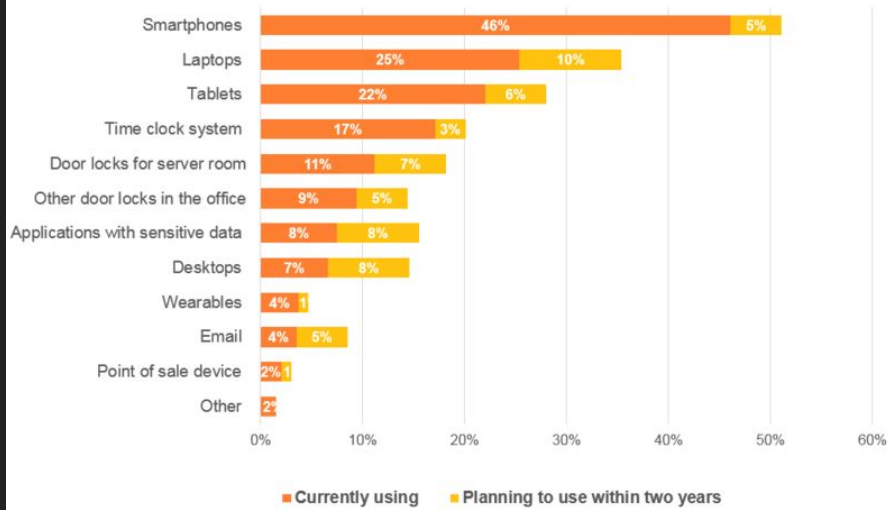
# Plan and Implementation

Biometrics is used in computer science for identification. It's applied in many fields:

- Law enforcement
- United States Department of Homeland Security
- Healthcare
- Airport security
- Military
- Mobile access
- Banks
- Building access

- Law enforcement: criminal identification
- United States Department of Homeland Security: border patrol, credential process
- Healthcare: identification for insurance
- Mobile access: smartphone security- touch id, facial recognition
- Banks: improving security and combating fraud
- Building access: fingerprints used to gain entry into a building or area

### Use of Biometric Authentication on Business Technologies



Via Spiceworks

# Positives

- Hard to fake or steal identity
- Convenient to use
- Efficient
- Easy to integrate



Via IFSEC Global

- It's impossible to imitate someone's fingerprint or other features, making biometric authentication very secure
- Very easy and straightforward to use compared to passwords
- Takes up less storage and space
- Easy to integrate because most biometric systems are used across several platforms



# Negatives

- Privacy
- Cost
- Possible failure
- User injury



Via Guardian Design

- Unlike passwords, users are known
- Installation costs thousands of dollars and upkeep makes companies continually spend more
- Biometric systems are generally accurate, but errors may still occur
- If a user gets injured a biometric system may not work for to identify them

# Summary

I am FOR the advancement of biometric technology. It has already been implemented in many areas of everyday life and has made identification much more secure and accurate.

## References

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