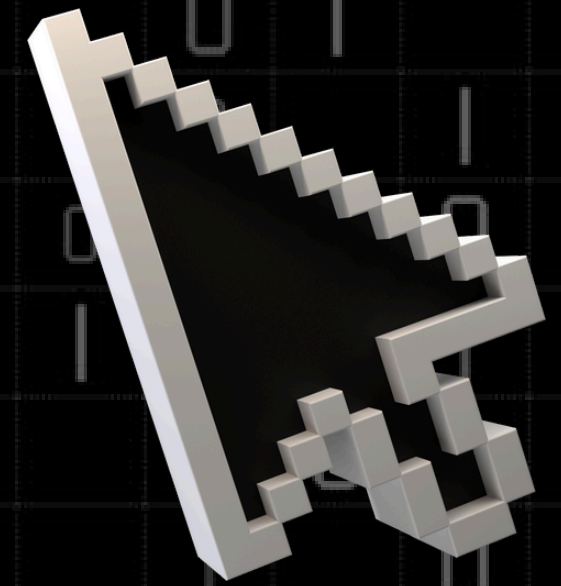
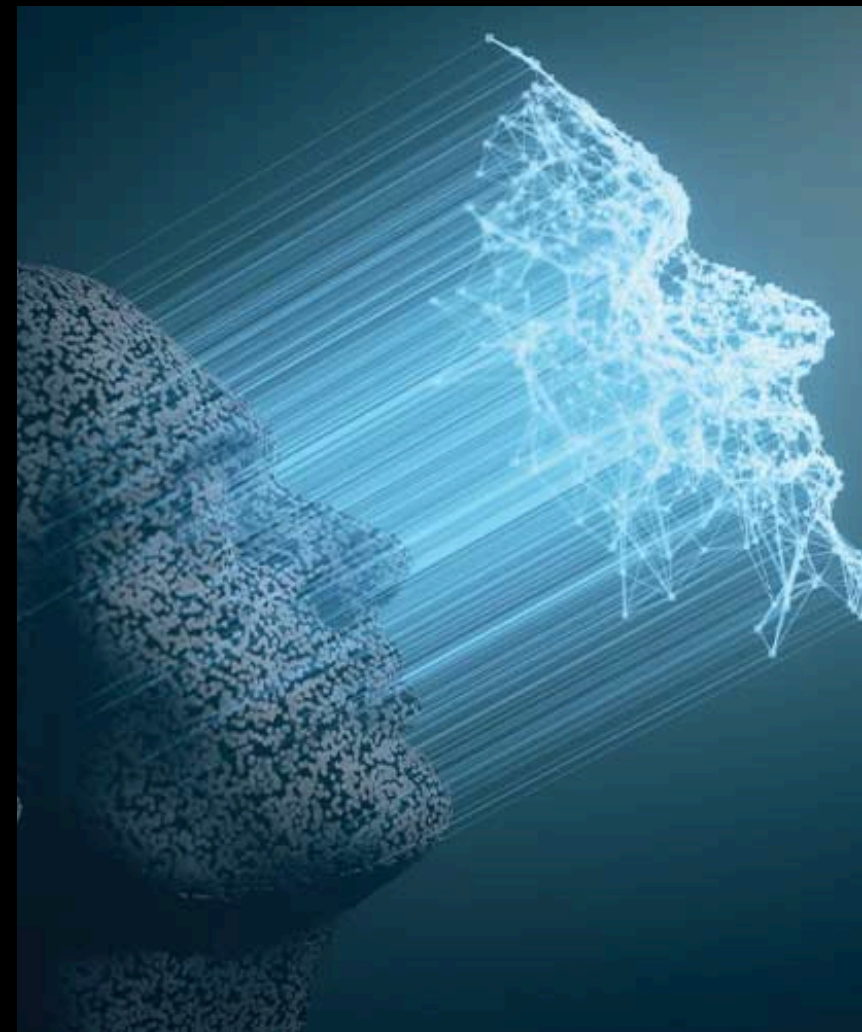


Facial Recognition

PRESENTED BY: **RUIYING LIU & ALEX LIAO**



The Topics



The Creation

The Origin and Basics of Facial Recognition

The Future

Future and Direction of Facial Recognition

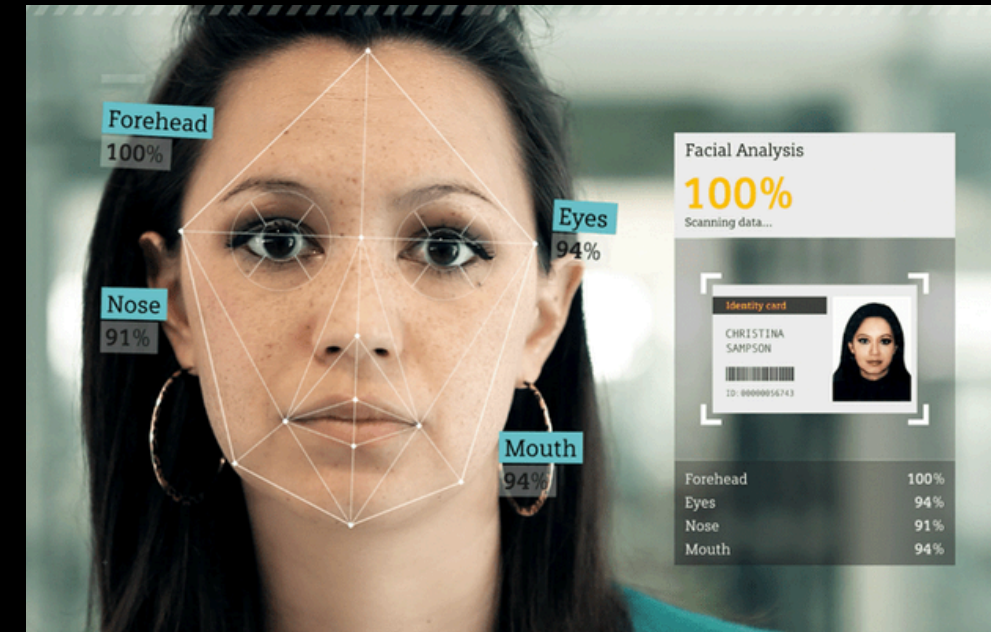
The Trust

Is this a Reliable and Trustful Technology

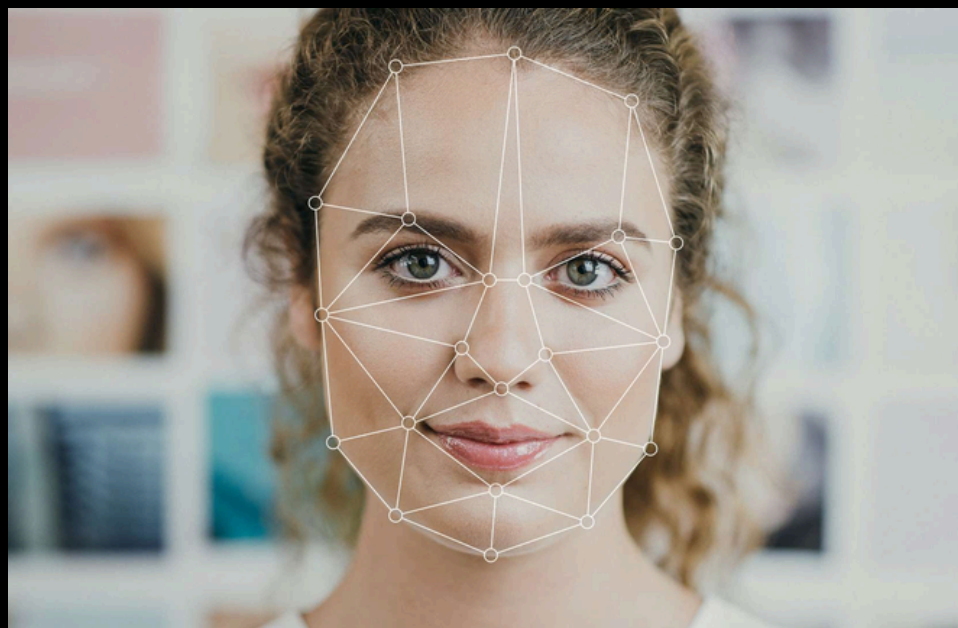
1 - The Detection



2 - The Analysis



3 - The Conversion



4 - The Comparision



Milestones of Facial Recognition

1960's - The Pioneers

- Woody Bledsoe, Helen Chan Wolf, and Charles Bisson
- Manual marking of various “landmarks” on the face then used a computer to compensate for pose variation through rotations.

1980/90's - The Rise of Eigenfaces

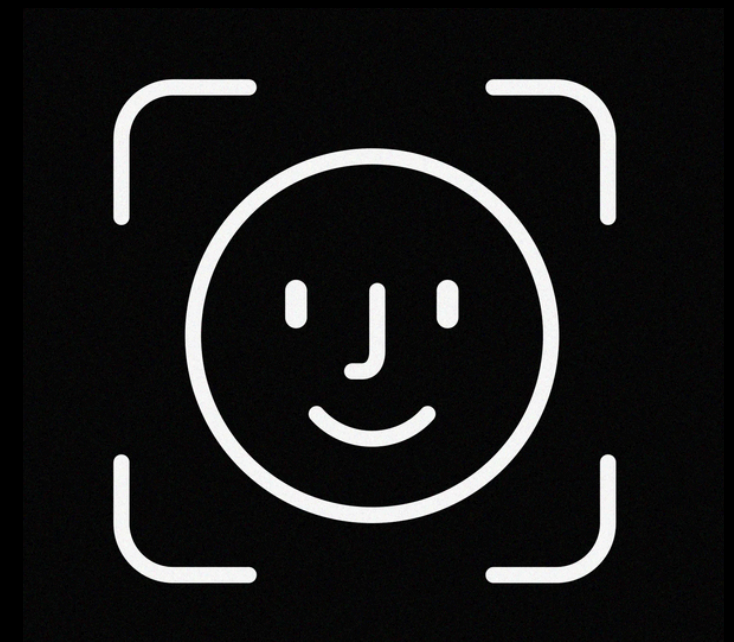
- Sirovich and Kirby showed less than one hundred face “values” can recreate a facial image accurately
- Turk and Pentland discovered how to use technology to recognize faces in pictures using Sirovich and Kirby’s work

1990s/2000s - FERET Programme

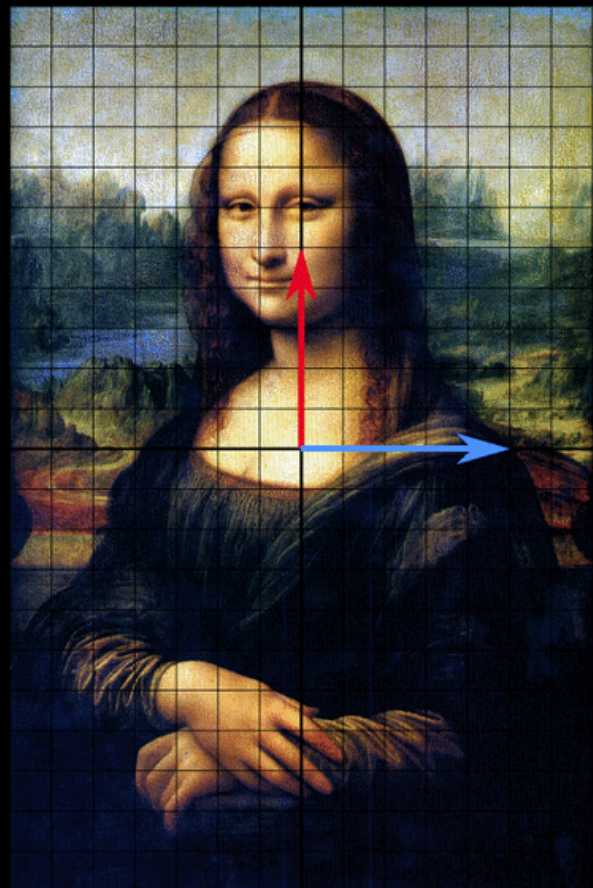
- DARPA wanted to create a commercial facial recognition market.
- The project created a database of 2,413 still facial images representing 856 people for testing usage.

2010/20's - The present

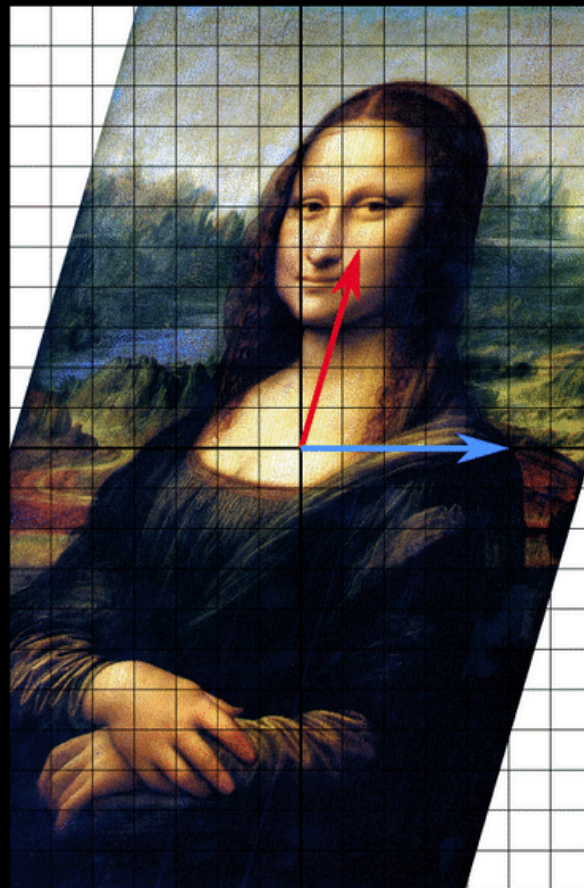
- Facebook (2010) used technology to tag people based on faces
- iPhone X (2017) popularized commercial use of Facial Recognition
- Airports, Events, Concerts, and Devices all now use Biometrics



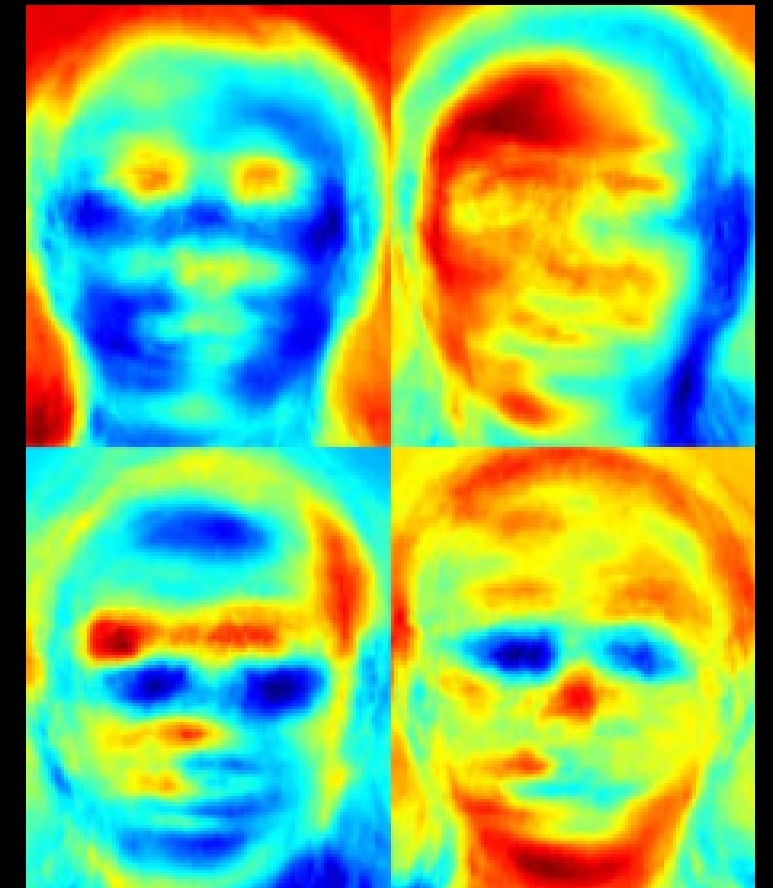
The Science Behind Facial Recognition



Linear Algebra

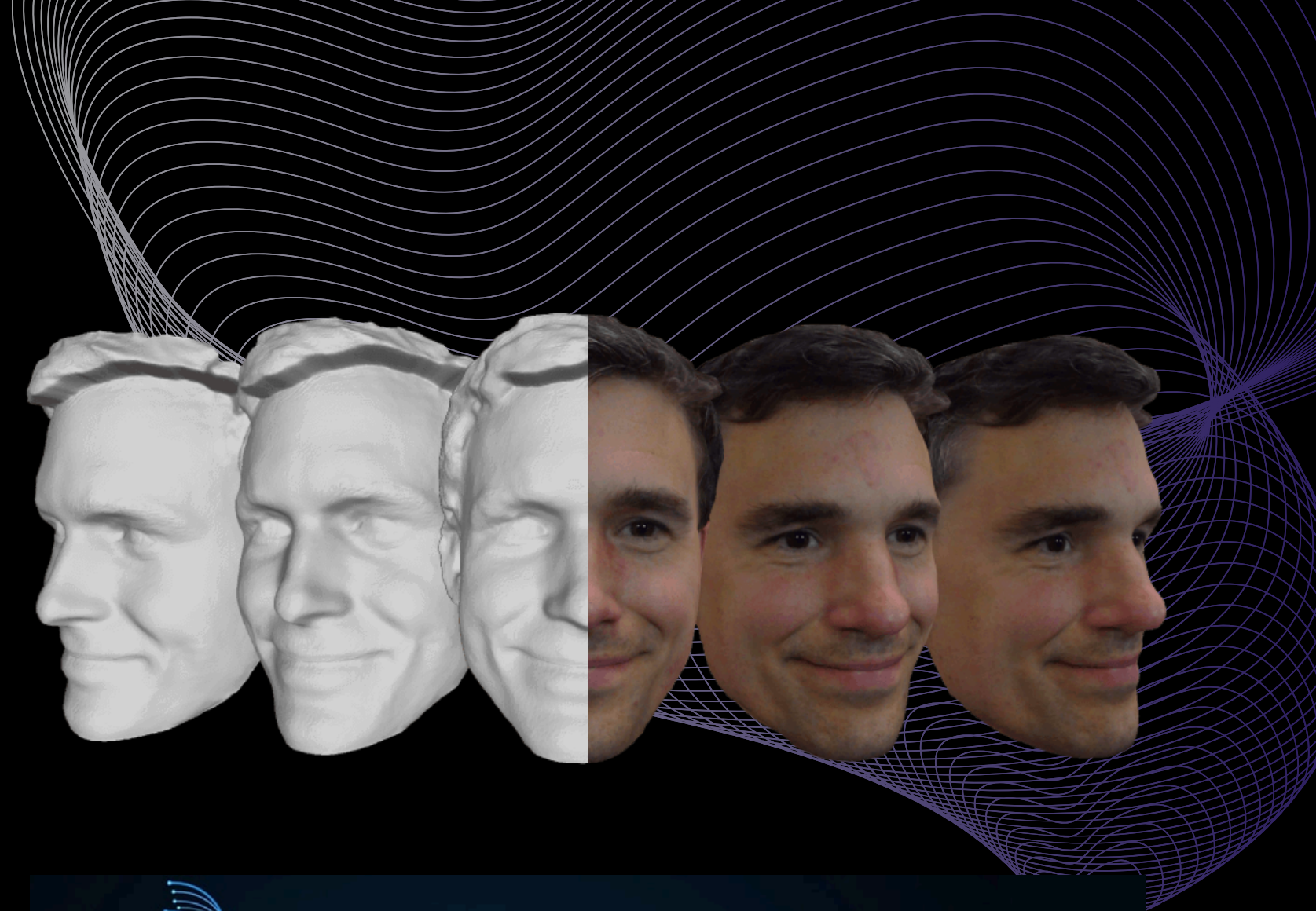


Eigenfaces



Fisherfaces

Future of Facial Recognition



1. 3D Facial Recognition

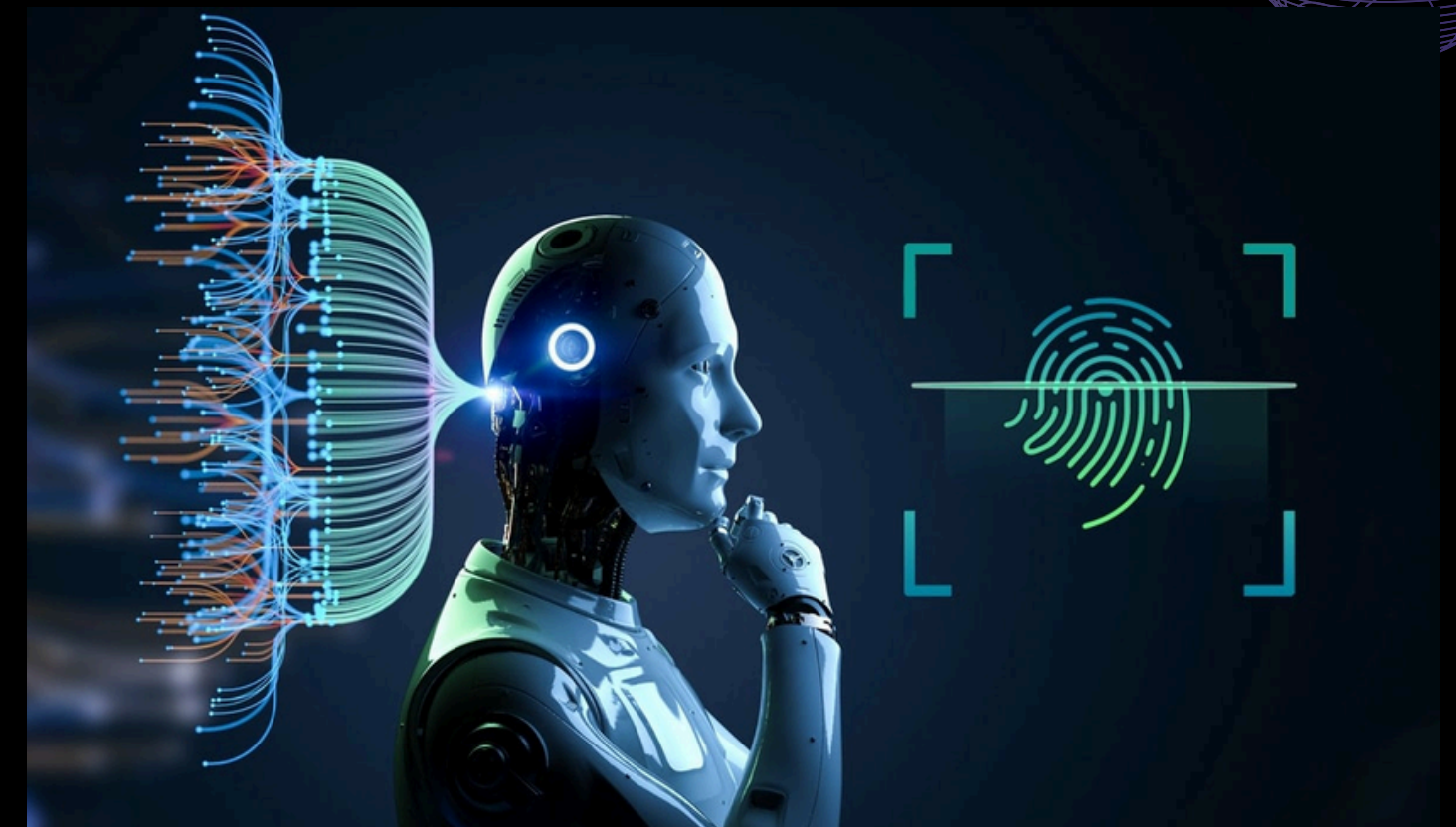
Current Biometric softwares utilize 2D facial recognition patterns to identify users. This could change in the future to ensure even more detailed scans of your entire head or more.

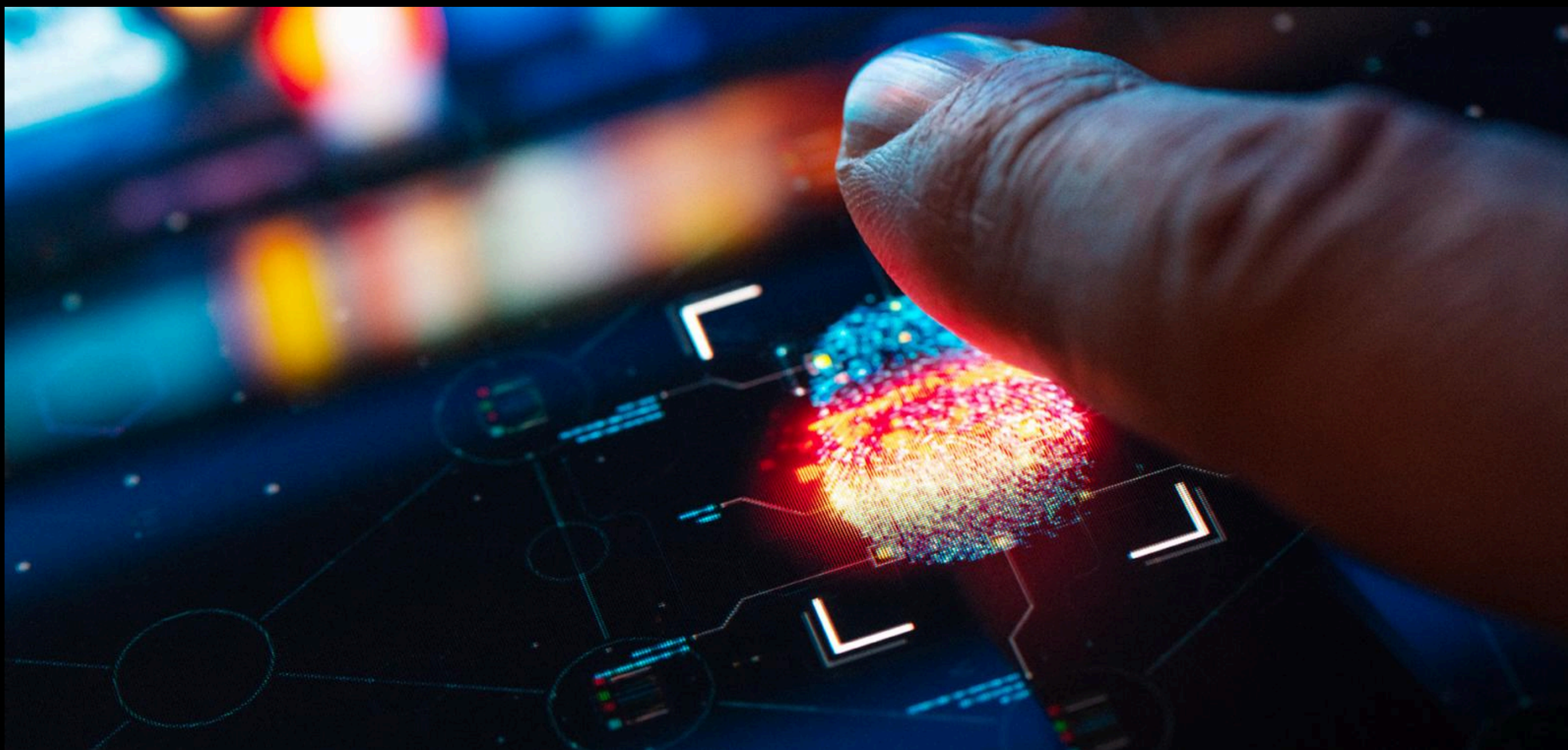
2. Augmented Privacy Features

There could be a rise of cybersecurity related to Facial ID protection as photo data related to ID in the future may all become encrypted or be stored in secured cloud storage to prevent ID theft.

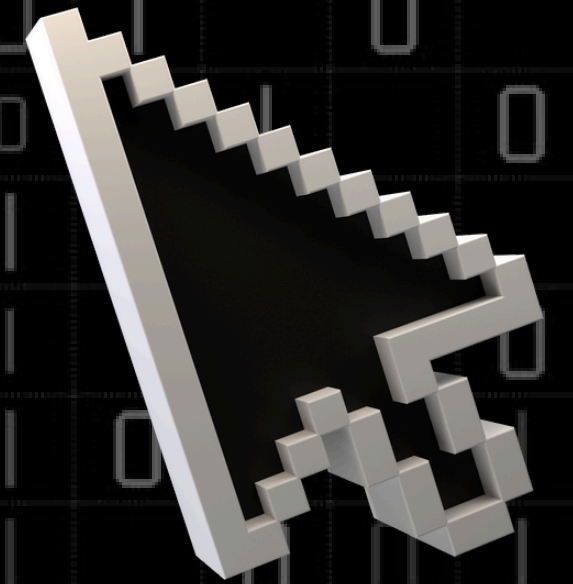
3. AI- Supported Analysis

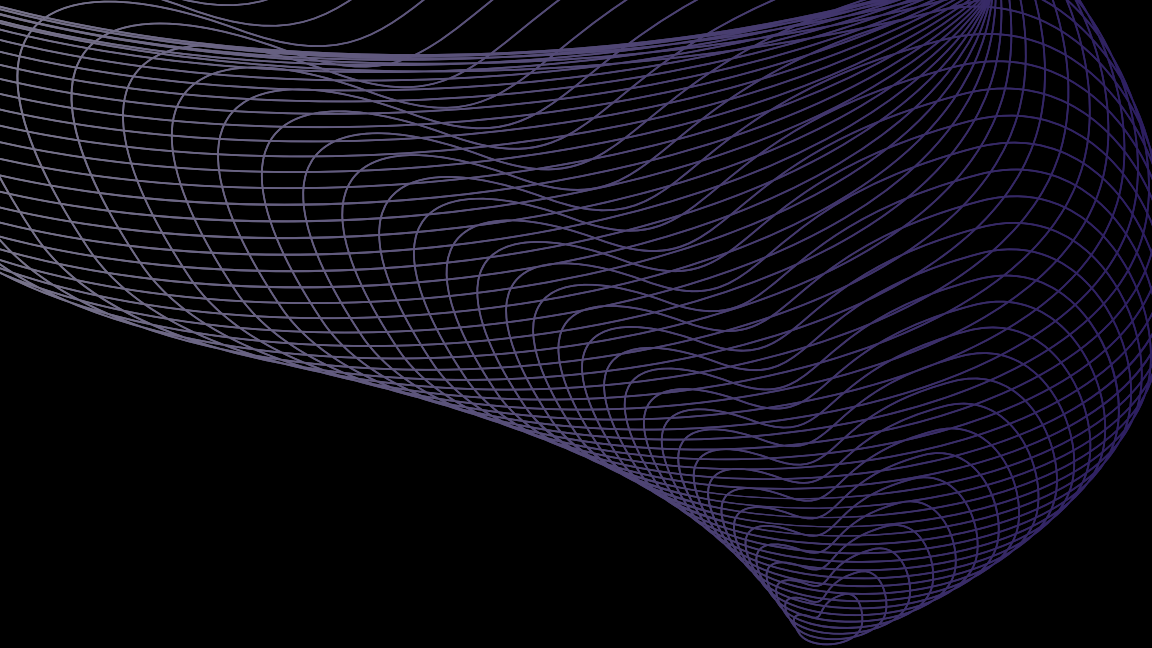
Facial features may become more easily identifiable based on AI analysis of observable emotions, moods, or even visible health conditions to identify users at a more advanced level.





**So, to what extent
do you trust
facial recognition?**



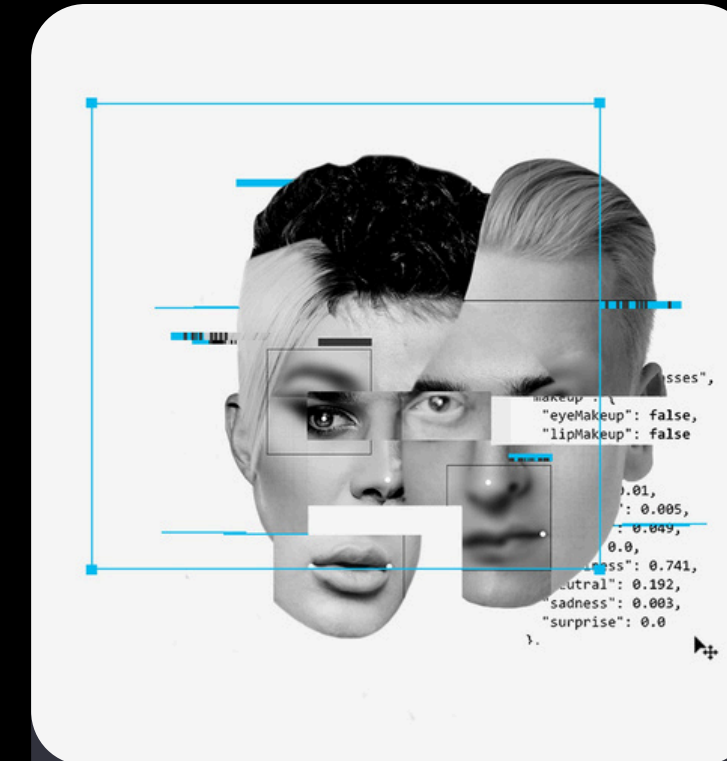


Bias and Accuracy Issue in Facial Recognition



Racial Bias

Facial recognition systems have been shown to be less accurate for people of color, raising concerns about racial bias and discrimination.



Gender Bias

Some systems have demonstrated bias in identifying individuals based on their gender, potentially leading to unfair treatment.



Age Bias

Facial recognition accuracy may vary depending on the age of the individual, requiring further research and development.

Surveillance and Public Safety Issue in Facial Recognition

1

Pro-Surveillance

- Enhanced public safety by identifying criminals and preventing crime
- Deterring crime through the knowledge that surveillance is in place
- Assisting in investigations and bringing perpetrators to justice

2

Anti-Surveillance

- Erosion of privacy and civil liberties, as individuals are constantly monitored without consent.
- Potential for misuse by authorities, leading to discrimination and suppression of dissent.
- Creation of a society where individuals live under constant scrutiny, undermining freedom and trust



Balancing Innovation and Privacy Protection



Convenience and Efficiency

Facial recognition can streamline processes and enhance convenience, but must be balanced with privacy considerations.

Privacy Protection

Robust privacy safeguards are crucial to ensure that facial recognition is not used for intrusive surveillance or discriminatory purposes.

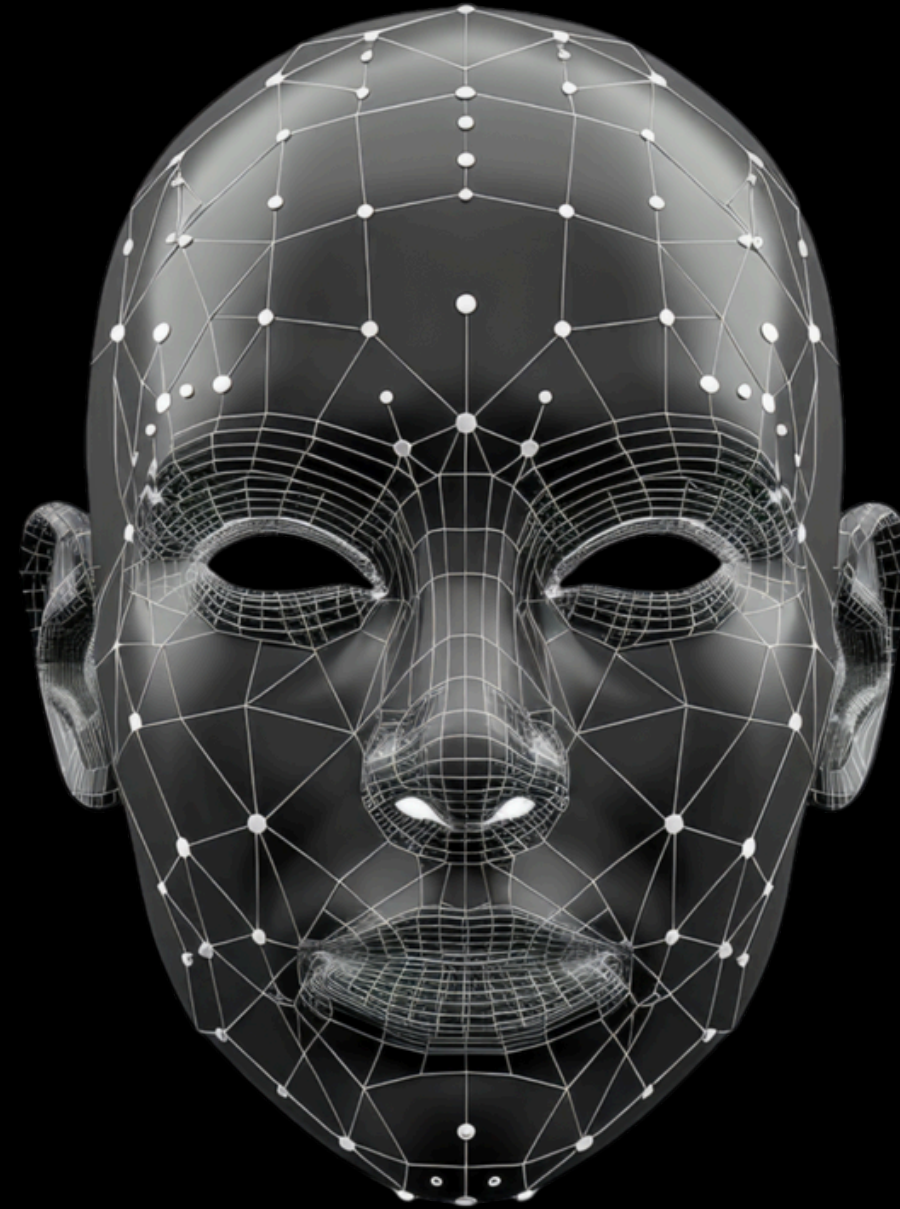
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Thank You