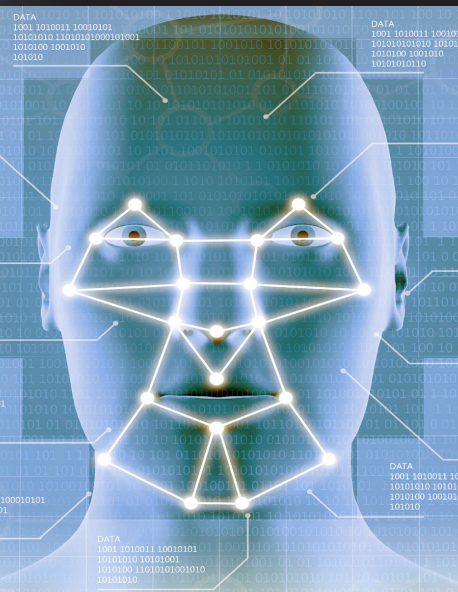




PINELLAS COUNTY SHERIFF'S OFFICE

FACIAL RECOGNITION FOR LAW ENFORCEMENT



Since September 11, 2001, the federal government and a number of states have turned to technology to address increasing identity fraud, which is an integral part of homeland security. Biometric technology designed to identify a person by using his/her distinguishing physical traits has been one of the most promising technological developments to address this identification and identity management.

As this technology has become more powerful and far more accurate, facial recognition has progressed as a tool for federal, state, and local identity databases. In Pinellas County, we have integrated facial recognition into our jail booking system and have partnered with Florida Department of Corrections, major sheriff's offices across the state, and select federal agencies to create a facial recognition database of about 13 million images. The system has allowed us to make thousands of identifications at booking, verify identities at release, and aid criminal investigations.

One of the technology's most successful uses is mobile deployments to patrol cars, allowing deputies on the street to identify a subject who has been stopped and has no means of identification.

However, for all the progress that Pinellas County has made through the enrollment of criminal mugshots, the greatest

- Facial recognition is a proven and powerful tool in the identification and verification processes.
- Mobile Identification allows for roadside identity verification.
- Pinellas County has identified thousands of subjects using fraudulent names via face recognition technology.
- Driver's license image data adds extreme value to facial recognition.

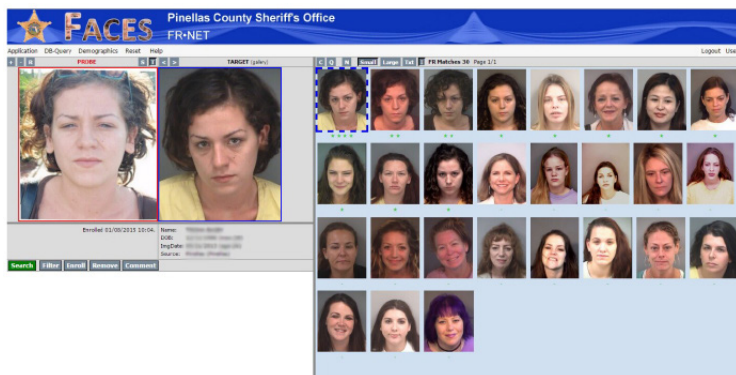
benefit comes from the enrollment of state driver's license images. Law enforcement faces a daunting number of fraud cases in Florida, and these criminals are virtually impossible to detect without this access, which eliminates a critical vulnerability criminals use to create fraudulent identities.

Facial Recognition and Driver's License Data

As the primary form of identification for most Florida and United States residents, state driver's licenses and ID cards must maintain their integrity.

In recent years, Pinellas County has pioneered facial recognition technology to support law enforcement and homeland security investigations. We are greatly encouraged by its success in our county and believe that expanding it to the driver's license database has been beneficial for Florida.

Pinellas County has partnered with local, state, and federal agencies. These partnerships allow for the largest collaborative facial recognition system dedicated to law enforcement in the United States. The success of these partnerships and technology is a testament to the impact that facial recognition will have on crime control for years to come.

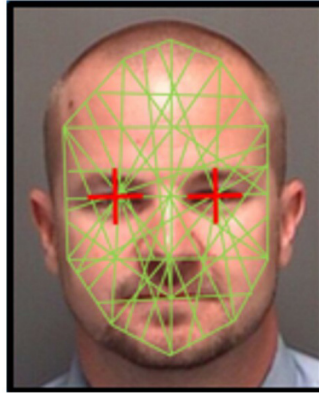


Facial recognition search and comparison

How Does Facial Recognition Work?

A facial recognition system is a computer application that automatically identifies or verifies a person from a digital image or a video frame. One method is to compare selected facial features from the image and a facial database.

Face structure contains unique landmarks, peaks, and valleys that make up facial features. Facial recognition defines these landmarks as "nodal points." Each human face has more than 100 nodal points. These points are measured, creating a numerical representation called an algorithm and then searched against other images with matching features. For example, an algorithm may analyze the relative position, size, and/or shape of the eyes, nose, cheekbones, and jaw.



Pinellas County utilizes the most current, state-of-the-art facial recognition system that uses a blended technology approach to yield extremely accurate and fast facial searches and responses.

The Pinellas County Booking System

At the core of the Pinellas County booking system is a face recognition-enabled mugshot application that captures an inmate's image and demographic information, as well as scars, marks, or tattoos. The system combines three main booking components: pre-booking, formal booking, and release processing.

PRE-BOOKING

Pre-booking entails an immediate facial search before the inmate is processed into the jail. Each of Pinellas County's estimated 55,000 inmates booked per year are identified or verified from previous incarcerations within seconds of entering the jail. This allows for immediate identification of fraud, medical, and historical inmate information.

FORMAL BOOKING

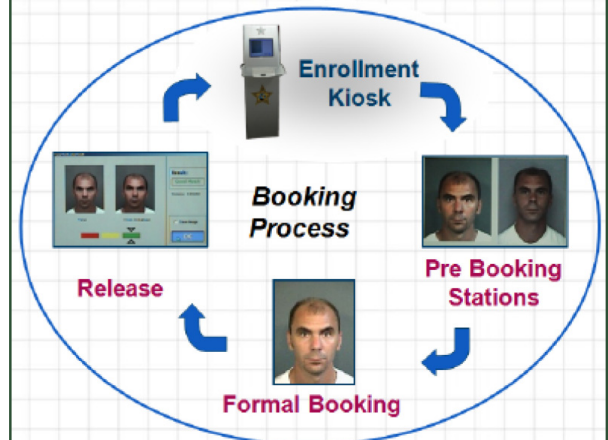
Formal booking includes capturing an additional image and demographic information and documenting scars, marks, and tattoos.

The Pinellas County Sheriff's Office has partnered with the Florida Department of Highway Safety and Motor Vehicles to participate with the FACES System. As of January 2013, the PCSO and partnering agencies can search the entire dataset of Florida driver's licenses.

RELEASE

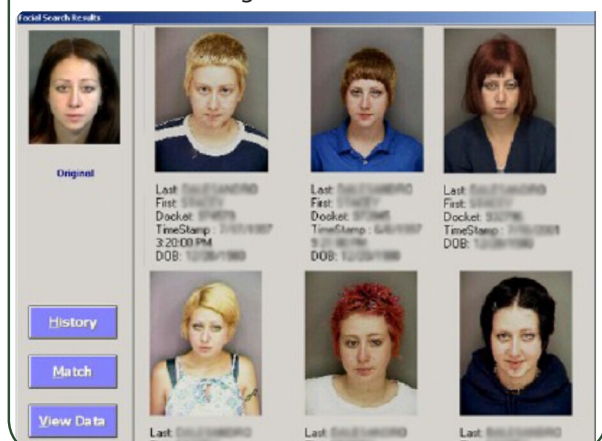
After a release photo is captured, a one-to-one comparison is verified using facial recognition to ensure the correct inmate is being released from jail. Highly populated jail facilities may see one or two erroneous releases per year based upon identity fraud or coercion. To date, no false releases have occurred since facial recognition verification was deployed.

Facial Recognition Core



The core facial recognition process begins with the booking process.

Match result from a facial search in the jail facility demonstrating numerous incarcerations



Investigative Applications

Investigative applications include Image Query and the Face Analysis Comparison and Examination System (FACES). Both of these provide a common web-based application platform for ease of use and scalability.

IMAGE QUERY

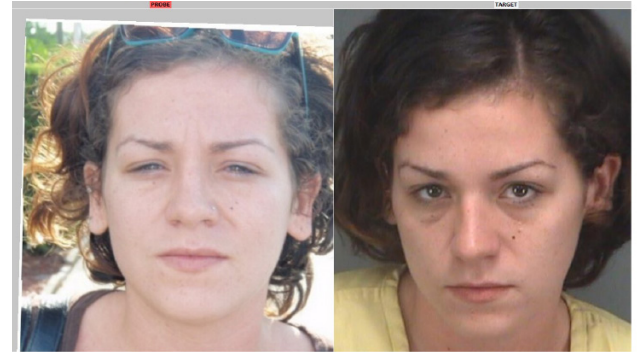
Image Query allows for web-based image and data retrieval of all data in the Pinellas County system. Frontal portraits, profiles, scars, marks, and tattoos may be retrieved statewide within seconds after an inmate has been booked into the system.

THE FACES APPLICATION

FACES allows for web-based facial recognition searches. Users may upload images of interest or unknown subjects to perform immediate facial recognition searches against the Pinellas County data and/or all partnering data in the system, which contains millions of subjects.

CJNET ACCESS

The PCSO provides Florida law enforcement agencies open access to Image Query and authorized-only access to FACES. Links to these programs are on the Florida Criminal Justice Network (CJNET) secure site at no cost to the agency.



Mobile Facial Recognition

The PCSO launched mobile facial recognition in 2004, which immediately equipped patrol deputies with a powerful identification/verification tool in the field.

Deputies capture an image of a person with a digital camera, transfer it to a laptop, enroll it in FACES, and review a gallery of ranked candidates.

FACES has provided thousands of leads and has resulted in many arrests that otherwise might not have been made.

Facial Recognition Expansion

As envisioned, PCSO has partnered with other Florida law enforcement agencies to maximize the effectiveness of the system. The Florida map to the right shows the counties who currently contribute mugshot data to the FACES image database.



Pinellas County has the largest collaborative facial recognition system dedicated to law enforcement in the United States.



The Pinellas County Sheriff's Office has implemented a system that uses facial recognition to enhance various aspects of the law enforcement process. By integrating this biometric technology in the jail facility, investigative applications, and mobile identification, Pinellas is leading the way for law enforcement throughout the nation.

To request FACES access for investigative purposes, please send an email to frnet@pcsonet.com.

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Face Analysis Comparison & Examination System

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