

# Sensor-Assisted Facial Authentication System For Smartphones

Tech ID: 24210 / UC Case 2014-873-0

## ABSTRACT

Researchers at the University of California, Davis have developed a method using standard mobile device sensors assisting with facial authentication to overcome the limitations faced by current methods.

## FULL DESCRIPTION

Facial recognition is a popular technique for authentication as recognition accuracy is high (> 95%). Most of today's smartphones and tablets are equipped with high-resolution cameras capable of capturing facial images. Many sophisticated facial recognition techniques currently used require the user to turn their head, and blink their eyes, to determine if the image analyzed is actually a person, rather than a pre-recorded video or picture. Based on these facts, it would seem that facial recognition would be widely used. However, current methods have trade-offs such as security flaws, or taking too long for the average user to authenticate, leaving them unappealing to use.

Researchers at the University of California, Davis have developed a novel method for facial recognition using newly developed algorithms to identify the authenticity of the image it is analyzing. The method designed with security and ease of use in mind, provides a secure authentication medium, while keeping its appeal by being just as fast as entering a password. The method also protects against malicious 2D-Media-Attacks while still establishing Fast Authentication. Potentially, this method is more practical than credential-based authentication methods, and may change the current state of human-device interaction.

## APPLICATIONS

- ▶ Authentication on Smart Devices
- ▶ Versatile for wide range of applications

## FEATURES/BENEFITS

- ▶ Fast Authentication
- ▶ More Secure
- ▶ Easy to Use

## PATENT STATUS

| Country                  | Type          | Number    | Dated      | Case     |
|--------------------------|---------------|-----------|------------|----------|
| United States Of America | Issued Patent | 9,813,907 | 11/07/2017 | 2014-873 |
| United States Of America | Issued Patent | 9,408,076 | 08/02/2016 | 2014-873 |

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## OTHER INFORMATION

### KEYWORDS

Facial Recognition, Fast Authentication, Biometric, Mobile Security, Smartphone Sensors, Accelerometers, Camera

### CATEGORIZED AS

- ▶ **Communications**
  - ▶ Internet
  - ▶ Networking
  - ▶ Other
  - ▶ Wireless
- ▶ **Computer**
  - ▶ Security
  - ▶ Software
- ▶ **Imaging**
  - ▶ Security

- ▶ Software
- ▶ **Security and Defense**
- ▶ Cyber security
- ▶ Screening/Imaging

#### RELATED CASES

2014-873-0

#### ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [Individual Identity Verified Through Device-Free, WiFi Based Framework](#)
- ▶ [Energy Efficient Trigger Word Detection via Accelerometer Data](#)
- ▶ [Adversarial Resilient Malware Detector Based on Randomization](#)

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