TECHNOLOGY

Sensor Adaptation in Iris Biometrics

OVERVIEW

Iris recognition is one of the most popular approaches for non-contact biometric authentication. Iris patterns are believed to be unique and remain stable for long periods of time, making it a natural choice as a biometric signature. With the rapid development of new sensors and improvements to existing ones for iris recognition, enrollment using one sensor and verification with another becomes inevitable. While verifying test samples using data enrolled from a different sensor can often lead to reduced performance, enrolling subjects every time a new sensor is deployed is expensive and time consuming.

Researchers at the University of Maryland's Department of Electrical and Computer Engineering have developed a prototype machine learning algorithm that "cures" the sensor adaptation problem so that iris reading sensors can utilize data collected from another sensor. They developed a general framework for learning kernel functions for iris codes, which makes numerous kernel-based machine learning algorithms applicable to iris codes. The proposed method also produces significant improvement in recognition performance, is robust to in plane rotations and can incorporate privacy using cancelable iris patterns. The result is an efficient solution requiring limited changes to the existing iris recognition systems.

APPLICATIONS

· Iris recognition sensors
· Security systems
· Marketing data harvesting

ADVANTAGES

· Allows data obtained from one sensor to be read by a different sensor
· Inexpensive solution as systems are improved or upgraded
· Provides significant improvement in sensor performance

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Additional Information

INSTITUTION

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PATENT STATUS

Patent(s) pending

LICENSE STATUS

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CATEGORIES

- Information Technology

EXTERNAL RESOURCES

- US Patent 9,530,052

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