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"An Iris and Retina Multimodal Biometric System"

ABSTRACT

Biometric technology is both a mature and developing field. While certain unimodal biometric technologies have been time-tested, multimodal biometrics are still emerging. One such combination is the retina/iris multimodal biometric (RIMB) system. RIMB is a developing technology that aims to address security and imaging problems inherent in current iris recognition systems. The main problem with such systems is that they can be fooled by a high resolution photograph of the face. The addition of retinal scanning helps alleviate spoofing and imaging issues associated with occlusions of the iris. By combining both iris and retinal cameras in one apparatus, scans can be done in parallel and data combined at the feature extraction level. Intuitively, RIMB provides for a nearly impossible to spoof system that is best in high security situations. The goal of this project is to conduct an in-depth study of the Iris recognition system and its shortcomings and develop hypothesis on the operation of RIMB. As we hypothesized, full fusion of identification codes of Iris and Retina Scans improves the false acceptance rate (FAR) and the false rejection rate (FRR).