PURDUE INNOVATES | Office of Technology Commercialization

Fingerprint Reader with Haptic Feedback

A haptic feedback system integrated with biometric scanning simplifies the authentication process for all users, increasing throughput and decreasing costs by eliminating the need for attendant assistance at security checkpoints.

High security checkpoints, especially when crossing borders or travelling through airports, can have long wait times, leading to increased stress levels. Biometric technologies, such as fingerprint readers and iris or facial recognition programs, are often times the source of the wait times. These technologies can be especially stressful for those with a disability such as blindness.

Researchers at Purdue University have combined two commonly used technologies to make the process of scanning a fingerprint simpler and less stressful, especially for those with disabilities. A vibrating pad connected to a fingerprint sensor will vibrate at different frequencies indicating good finger placement and appropriate force. The optimal force metric is individualized for each person and is dependent on a set of preestablished criteria. This technology is especially useful for blind individuals who are unable to see if the scan is complete and often times requires assistance from an attendant or companion. This method could also be used for iris recognition and other biometric technologies where, for instance, the vibration would come from a mat on the floor that individuals stand on. Overall, this technology could reduce the need for checkpoint attendants and greatly reduce the amount of time-spent waiting in security lines, therefore, increasing throughput, decreasing costs, and reducing stress.

Advantages:

-Increases ease of use for individuals with disabilities

-Decreases cost by eliminating need for attendants

-Makes process much faster and less stressful

Potential Applications:

-Computer technology

Technology ID
2013-ELLI-66540

Category
Robotics & Automation/Perception & Sensing

Authors
Stephen Elliott
Andrew Marshall
Kevin O'Connor
Colin Patterson
Matthew Sprau

Further information
Patrick Finnerty
pwfinnerty@prf.org

View online

TRL: 6

Intellectual Property:

Copyright, 2013-08-23, United States | Trademark, 2013-08-27, United States | Trademark, 2013-08-27, Europe | Provisional-Patent, 2013-10-21, United States | PCT-Patent, 2014-10-21, WO | NATL-Patent, 2016-04-21, United States

Keywords: Biometric technology, fingerprint sensor, vibrating pad, iris recognition, facial recognition, accessibility, disability aid, security checkpoint, reduced stress, increased throughput