Studying Border Control at the International Center for Biometric Research

October 12, 2015

Border control authorities across the globe increasingly invest in more secure and reliable identification systems following an extensive growth in traveler traffic, longer queuing times and increased security threats at U.S. borders. Border points have seen an increase in the implementation of biometric identification systems, such as the use of automated self-serve kiosks or 'gates.' These processes allow travelers to cross the border without the need for intervention by border officers.

The United States Visitor and Immigrant Status Indicator Technology (US-VISIT) program is the U.S. Customs and Border Protection (CBP) management system. The CBP is primarily located at border points of entry such as air and sea ports and is largely verified through. The identification system initially verified a facial image and two fingerprint images, but in 2007 was changed to the 10 fingerprint "slap" system with the intention to make the U.S. visitor entry process faster and more accurate. [1] The current verification process requires the traveler to hand over their travel documents, provide a 10 fingerprint slap and face a web camera. The camera, mounted on the US-VISIT federal inspection booth, assists in facial verification. The border agent uses matching software to verify the biometric data and ultimately provide the decision whether to allow the traveler to enter the country.

The U.S. border presents challenges for this paradigm. First, it can be concluded that all travelers are different since airports and border checkpoints interact with a broad demographic. Height, weight and overall size vary by individual. Second, globalization has made border control a time sensitive event.

These issues have fueled research at the International Center for Biometric Research (ICBR) of Purdue University to build a replica U.S.-Visit Federal Inspection Station (FIS). One graduate student, Zach Moore, is using this FIS replica booth to conduct his thesis research at integrating the Microsoft Kinect Version 2 at tracking body points when users of the FIS system are interacting with biometric devices. Development of this research can help provide feedback to users of biometric systems to potentially increase the throughput of passengers. This innovation is a valuable part of the ICBR’s research and can have a global impact.

The ICBR was established in 2001 as the Biometric Standards, Performance and Assurance Lab. The International Center for Biometric Research’s mission is to focus on the needs of industry, by providing research services to answer their needs, whether that’s new product development, testing and evaluation or solving a problem. The ICBR is dedicated to learning, engagement and discovery. The ICBR prides itself as a leader in industry-focused research and its courses are centered on learning-by-doing. ICBR offers a number of graduate and undergraduate courses, including an MS online degree in biometrics, a minor in biometrics and a competency-based learning style. Using the latest learning management systems and software developed at Purdue University, there are many opportunities to learn about biometrics through the International Center for Biometric Research.

For more information about the ICBR, visit www.icbrpurdue.org, or email icbrpurdue@gmail.com.

Reference:

For permission and restrictions on reprinting HDIAC’s Spotlights, please contact publications@hdiac.org.
This content was published on October 12, 2015 as an HDIAC Spotlight at the following URL: https://www.hdiac.org/node/2336