

Right counter height can improve fingerprint capture

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Once a tool primarily used by law enforcement, biometric technologies such as fingerprint readers increasingly are being used by governments and private industry for a personal ID that can't easily be forged or stolen. But, despite their increased use, little attention has been paid to the human-system interaction that these technologies require.

With fingerprint scanners and other imaging devices, for example, user behavior can affect both the quality of the image and the time required to capture it. At present there are no guidelines for using biometric hardware and software that could lead to improved usability and interaction techniques.

As part of its role under the USA PATRIOT Act, researchers at the National Institute of Standards and Technology conducted a study examining the effect of the work surface height of a fingerprint sensor on the quality and the time required to collect prints. NIST researchers collected five types of fingerprint images from 75 NIST employees, ranging in age from 17 to 67.

Images were collected from a "left slap"; (all fingers on the left hand except for the thumb); a "right slap"; a left or right thumb; and both thumbs. Work surface heights varied from 26 inches (660 millimeters) to 42 inches (1,067 millimeters). The fingerprint scanner used in the study had a height of 6 inches (152 millimeters)--the expected height of the next generation of fingerprint scanners to be used in many federal government applications.

The researchers found that participants performed fastest using a work surface height of 36 inches (914 millimeters); and a height of 26 inches (660 millimeters) produced the highest image quality. Participants preferred a work surface height of 32 or 36 inch (813 or 914 millimeters); the 42 inch height was most uncomfortable. Seventy-six percent of the participants preferred starting with their right hands, which also made the process faster. Quality dropped dramatically when thumbprints were taken simultaneously rather than one at a time.

Source: National Institute of Standards and Technology

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