Quantitative approach to forensic fingerprint comparison studied

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The National Institute of Justice (NIJ) has awarded researchers at Virginia Tech a two-year, $854,907 grant to develop a quantitative approach to measuring and establishing a standard for "sufficiency" of information available in friction ridge (fingerprint) patterns.

Led by Randall Murch, associate director, Research Program Development, Research Division, National Capital Region, the team includes Associate Professor Lynn Abbott and Professor and Dean's Faculty Fellow Michael Hsiao, Bradley Department of Electrical and Computer Engineering; Professor Ed Fox, Department of Computer Science, Virginia Tech College of Engineering; and Professor Bruce Budowle, University of North Texas, Health Sciences Center, Center for Investigative Genetics.

Murch explained that machine-aided systems routinely digitize and automatically compare finger and palm prints that contain a sufficient amount and quality of information based on algorithms for that purpose. "However," he said, "digitized prints of poor quality require the intervention of human experts to perform comparisons and identifications. Latent fingerprints, such as those left at a crime scene which are often partial or distorted, are analyzed and compared by human experts whose expertise and judgment is based on their training and experience."

By convention, Murch said, there is no quantitative standard used by the worldwide fingerprint community to determine the quantity and quality

of information in an image or for the number of points of comparison required for identification.

Murch was a member of the National Academy of Sciences (NAS) committee which issued a report in February 2009 entitled Strengthening Forensic Science in the United States: A Path Forward, calling upon the forensic science community to improve and strengthen the scientific basis of analyses, interpretations, and conclusions in a number of fields, including pattern evidence such as friction ridge analysis.

"This research effort to develop a standard is very important to the forensic community," said Murch. "It addresses the NAS recommendation and should contribute significantly to advancing science in other forensic pattern recognition and comparison fields, as well."

Source: Virginia Tech ([news](#) : [web](#))