



E61 **Biometric Research Database Catalog: Improving Access to Publicly Available Biometric Data Sets**

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The goal of this presentation is to discuss the existing challenges of making existing databases open to researchers, the development of a centralized catalog to improve access to publicly available databases, and plans to develop a path forward on expanding existing publicly available databases.

This presentation will impact the forensic science community by providing researchers with information about current efforts to expand access to biometric datasets. The Biometric Research Database Catalog will provide the community with a central location to obtain information about publicly available biometric data sets to assist technology development efforts.

Biometrics refers to technologies used for the automated recognition of individuals based on their behavioral and biological characteristics.¹ The most commonly used biometric modalities include fingerprint, palm print, iris, face, voice, and handwriting. Today, biometrics are increasingly used to recognize individuals and regulate access to information, physical space, services, and to cross international borders.² In forensics, biometrics serve a critical function in helping to identify or verify the identity of an individual for crime-solving purposes. The National Institute of Standards and Technology (NIST) has been actively involved in the testing and evaluation of biometrics technologies, starting with fingerprints in the 1960s. This involvement has expanded over the decades to include efforts in various biometric modalities such as fingerprints, palm prints, faces, irises, voices, and handwriting, including the development of a comprehensive biometric data transmission standard.

One challenge to the advancement of biometric technology is the development of test data sets. A number of factors affect the appropriateness of a test data set in evaluating a biometric technology, including whether the dataset is representative of: (1) the subject population; (2) the collection environment; and, (3) the system hardware expected. Researchers need greater access to databases to further studies on distinctiveness and to advance technologies to improve the accuracy and precision of biometric systems.

The purpose of this presentation is inform attendees of the development of a catalog of publicly available datasets by the NIST in coordination with the National Institute of Justice (NIJ). Currently, the catalog contains approximately 200 existing publicly available datasets of various modalities, includes information about the samples via a detailed taxonomy, and serves as a pointer for researchers to obtain access to data supplied by host agencies. The catalog will be used as a basis for discussion among the biometric community to develop a path forward on expanding existing publicly available databases in early 2015.

References:

1. Hoang, B., Cuadill, A. Biometrics. IEEE Emerging Technology Portal. 2012. <https://www.ieee.org/about/technologies/emerging/biometrics.pdf>
2. National Research Council. Biometric Recognition: Challenges and Opportunities. Washington, DC: The National Academies Press, 2010.

Biometrics, Fingerprints, Databases