

# *Biometric Consortium 2006 Conference*

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**Topic:** 3D Touchless Fingerprints: Compatibility with legacy rolled images

**Abstract:** Fingerprints are traditionally captured based on contact of the finger on paper or a platen surface. This often results in partial or degraded images due to improper finger placement, skin deformation, slippage and smearing, or sensor noise from wear and tear of surface coatings. A new generation of touchless live scan devices that generate 3D representation of fingerprints is appearing in the market. This new sensing technology addresses many of the problems stated above. However, 3D touchless fingerprint images need to be compatible with the legacy rolled images used in Automated Fingerprint Identification Systems (AFIS). In order to solve this interoperability issue, we propose an unwrapping algorithm that unfolds the 3D fingerprint in such a way that it resembles the effect of virtually rolling the 3D finger on a 2D plane. Our preliminary experiments show promising results in obtaining touchless fingerprint images that are of high quality and at the same time compatible with legacy rolled fingerprint images.

**Biography:** Yi Chen received her BS degree in Computer Science and Engineering from Sichuan University, Chengdu, China in 2002. She is currently enrolled in a dual degree program in Computer Science and Engineering (doctoral) and statistics (masters) at Michigan State University. Her research interests include statistical pattern recognition, image processing and biometric authentication. She worked as a summer research intern at Identix Corporate Research, New Jersey and TBS Holding, Switzerland in 2005 and 2006, respectively. She is a co-author of the Motorola Best Student Paper at the International Conference on Biometrics (ICB), Hong Kong, 2006.