

INTUVISION TO DEVELOP VIDEO SOFT BIOMETRY PROTOTYPE FOR SURVEILLANCE AND SECURITY INDUSTRY



Woburn, MA—intuVision and partner, West Virginia University (WVU) Biometric Research Group, are developing a feasibility prototype for an automated Video Soft Biometry system. Soft Biometry features are those that provide categorical information about people, such as gender, ethnicity and size, but are not enough to uniquely identify a person. The system will enable the extraction of soft biometry features from video for surveillance and security purposes without any intrusion of privacy.

At present, intelligent video surveillance systems extract very limited knowledge about objects at best, by classifying objects into person, vehicle, group, etc. with no further detail on the people. Other vision-based biometrics such as Face and Iris Recognition systems attempt to uniquely identify a person and require high-resolution imagery.

When human observers see a person, they quickly extract categorical information, such as gender and ethnicity, even from poor quality images without having to “recognize and identify” them. These types of characteristics that categorize but not identify a person uniquely are called

“soft biometric features” and they provide high-level information about the individuals. Extracting these features automatically from surveillance video will provide significant help to security personnel while protecting the privacy of individuals.

For example the pictures above depict “average” male and female faces for three ethnic groups, which are composites of several hundred face images from public databases. These “average” faces do **not** correspond to any single individual and cannot provide positive ID on a specific person. But they can help to determine the gender and ethnicity of a person whose face is visible in video without having to recognize the face. intuVision reported 85% correct classification of gender and ethnicity for these six classes, Asian, Caucasian and African American male and females.

intuVision and WVU are exploring soft biometry features that can be robustly extracted from different types of video sources and reliably used for categorical classification of people. “This exciting new technology leverages our experience in video object tracking and classification,” says intuVision’s Founder and CEO Dr. Sadiye Guler. “We believe by studying significant features of face, and human measurements from video, it is possible to obtain categorical information on people without having to identify them and our early results are very promising. In addition to security or database search applications, this technology could be valuable in many fields, such as market research. For example a retailer may wish to determine how many women stop to view certain products displayed on a certain aisle or end-cap.”

Previous studies have focused on soft biometric features from still images or video collected under controlled environments, whereas this work focuses on using surveillance quality video to take advantage existing video infrastructure and video data that is already being collected for security purposes and will be the first prototype in its class offering video surveillance with people gender and ethnicity detection.

intuVision, Inc. is an advanced technology company creating next-generation intelligent video products and solutions that turn video cameras into smart sensors. intuVision specializes in Video Surveillance, Security and Video Investigation applications. (www.intuvisiontech.com)