Gagnon, L., Laliberté, F., Foucher, S., Branzan Albu, A. and D. Laurendeau. “A System for Tracking and Recognizing Pedestrian Faces Using a Network of Loosely Coupled Cameras” In *Proceedings of Defense and Security 2006 Symposium - Visual Information Processing XV*, *(SPIE #6246)*, vol. CDS213, [CD-Rom, 6246-25]. Orlando, FL., USA, April 18-19, 2006.

Abstract
A face recognition module has been developed for an intelligent multi-camera video surveillance system. The module can recognize a pedestrian face in terms of six basic emotions and the neutral state. Face and facial features detection (eyes, nasal root, nose and mouth) are first performed using cascades of boosted classifiers. These features are used to normalize the pose and dimension of the face image. Gabor filters are then sampled on a regular grid covering the face image to build a facial feature vector that feeds a nearest neighbor classifier with a cosine distance similarity measure for facial expression interpretation and face model construction. A graphical user interface allows the user to adjust the module parameters.

Keywords: Video surveillance, face recognition, pedestrian detection, multi-camera network, facial expression