

The author(s) shown below used Federal funds provided by the U.S. Department of Justice and prepared the following final report:

Document Title: Practitioner Centric Video Analytics, Final Summary Overview

Author(s): Ming-Ching Chang, Jixu Chen, Siwei Lyu, Peter Tu

Document No.: 250272

Date Received: October 2016

Award Number: 2013-IJ-CX-K010

This report has not been published by the U.S. Department of Justice. To provide better customer service, NCJRS has made this federally funded grant report available electronically.

Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

compared with respect to similarity in a straightforward manner by considering a weighted sum of their affect differences. Recognition is achieved by measuring the similarity scores between a query behavior and all behaviors resident in a database.

Behaviors: For testing and evaluation purposes, thirteen types of behaviors were enacted and recorded. Each behavior involved three individuals and was performed twice resulting in a query and true mate/database instance. The true mates can be viewed as a set of database behaviors. The overall goal of this task is to be able to compare each query behavior with all members of the behavior database with the hope that the highest similarity score occurs when comparing the query against its true mate.

Video Analytics Streams: Each of the thirteen behavior pairs were processed using GE's social interaction analysis system. The site was instrumented with a set of range and PTZ cameras. Each person was tracked and the PTZ cameras were automatically focused onto targeted faces. The output of this module was the location, articulated motion patterns, gaze direction and facial expressions for each individual (see Appendix A3 for a description of these capabilities).

Signal Generators: Under this program, 6 prototype signal generators were instantiated. They focused on: emotion valence, gaze standard deviation, gaze engagement, location proximity, speed and motion magnitude. Each signal generator is associated with a set of parameters that define its performance. Users are allowed to define multiple versions of each signal generator by either selecting parameter values manually or setting them via a random number generator.

Signatures: For the purposes of experimentation, 3 versions of each of the prototype signal generators were instantiated resulting in 18 affect scores for each of the 13 behavior types (See

