
Press Release - SIGGRAPH 2010

Announcing Tandent FR

Face Recognition Possible Everywhere With Revolutionary Preprocessor

Will Accelerate Growth of FR Industry

Real-Time Demonstration at SIGGRAPH 2010

July 26, 2010, Los Angeles. Tandent Vision Science Inc. today introduces a revolutionary technology that substantially enhances the performance of face recognition systems. The **Tandent FR Preprocessor** for face recognition accelerates much broader commercial deployment of face recognition technology in settings such as mass transportation systems, airports, office buildings, sports arenas, city streets and all other environments where illumination cannot be controlled.

Breakthrough Technology

The new Tandent **preprocessors** operate between image capture and existing computer vision systems and provide enhanced input for computer vision algorithms. Replacing input images with Tandent preprocessed images dramatically improves performance of face recognition systems operating in real world settings.

Current face recognition systems require highly controlled lighting for imaging both the single face to be identified as well as all the faces in a searchable database which can include millions of images. Thus, kiosks or other setups with controlled lighting are required for both phases of imaging.

The requirement of special face lighting, apart from being very costly, severely restricts the range of settings in which face recognition can be deployed. Both phases of image acquisition, furthermore, are conspicuous and require cooperation. Thus, despite the fact that current technology can find one face in a database of millions, face recognition has had very limited global deployment.

The **Tandent FR Preprocessor**, however, completely eliminates the need for kiosks or any special face lighting in both phases of image acquisition. Thus, the preprocessor makes it possible to extend accurate face recognition technology into essentially unlimited applications in the naturally illuminated world.

The **Tandent FR Preprocessor** converts a single image from an off-the-shelf still or video camera into an image that simulates “kiosk” face lighting. Whatever the original illumination conditions, the preprocessed image depicts only shading and features used by current face recognition systems and eliminates cast shadows and other unwanted illumination features that confound the recognition process.



Original Image



Reflectance



Illumination

Face recognition applications require the use of shadowless face lighting to capture both the “probe” image as well as the database or “gallery” of images to which the probe image will be matched. This lighting constraint seriously limits the settings and circumstances where face recognition technology can be deployed.

The new Tandent FR Preprocessor eliminates the need for special face lighting in face recognition. The top image, for example, was captured outdoors with severe shadows that would thwart standard face recognition technology. The bottom left image shows the output of the Tandent FR real-time preprocessor that is specifically designed for face recognition systems. The preprocessed image includes the shading required by face recognition algorithms but eliminates cast shadows and other unwanted illumination features. Thus, the Tandent preprocessed image is functionally equivalent to controlled lighting. Using Tandent FR Preprocessors, face recognition systems can now perform in extreme outdoor lighting as well as other settings where illumination cannot be controlled such as mass transit systems, airports, office buildings, stadiums, convention centers and streets. The Tandent real-time face recognition preprocessor is demonstrated live at SIGGRAPH 2010.

Commercial interest in face recognition technology has increased substantially in recent years due to significant technical improvements combined with the rapid worldwide rise in security concerns. Most analysts estimate annual revenues at \$500M to \$1B for the worldwide face recognition industry even though current technology functions only in highly controlled illumination. By making it possible to deploy face recognition in settings where illumination is not controllable, the **Tandent FR Preprocessor** is positioned to enable considerable global expansion of the face recognition industry.

Since the Tandent FR preprocessor operates in real-time, as demonstrated live at SIGGRAPH 2010, it can also be used with video surveillance systems for **real-time identification** of moving persons. High-performance face recognition can now be pursued wherever security is a concern.

About Tandent

Tandent Vision Science Inc. is a privately held computer vision research and development company headquartered in San Francisco with principal research facilities in Pittsburgh, adjacent to Carnegie Mellon University (CMU) with supporting facilities in other locations across the United States. Tandent was founded to solve fundamental problems limiting growth of the computer vision industry. Tandent is a good citizen of the worldwide computer vision community, the exclusive sponsor of the respected Vision and Autonomous Systems Center (VASC) Seminar Series at CMU, and involved in a wide range of computer vision and human vision research activities.

Contact Information

Product Sales, Licensing and Technical Information

Howard Taub, Ph.D.
Director of Strategic Partnerships
1-800-973-4830 x 34
htaub@tandentvision.com

Information About Tandent Vision Science, Inc.

Matthias de Haan
Director of Operations
1-800-973-4830 x 32
info@tandentvision.com

Corporate Address

Tandent Vision Science, Inc.
505 Montgomery Street, Suite 1100
San Francisco, CA 94111

Career Opportunities

Tandent Vision Science Inc. is a unique research and development company that has attracted an outstanding group of scientists including distinguished academic researchers, accomplished industrial scientists, and some of the most outstanding recent graduates in the field of computer vision. If you are interested in working with us, please visit our website for more information.

Other Information

For other information about our company, please visit our website www.tandentvision.com