



## A breakthrough technology that dramatically increases performance

### Overcome Recognition's Most Persistent Foes: Pose, Lighting, and Expression

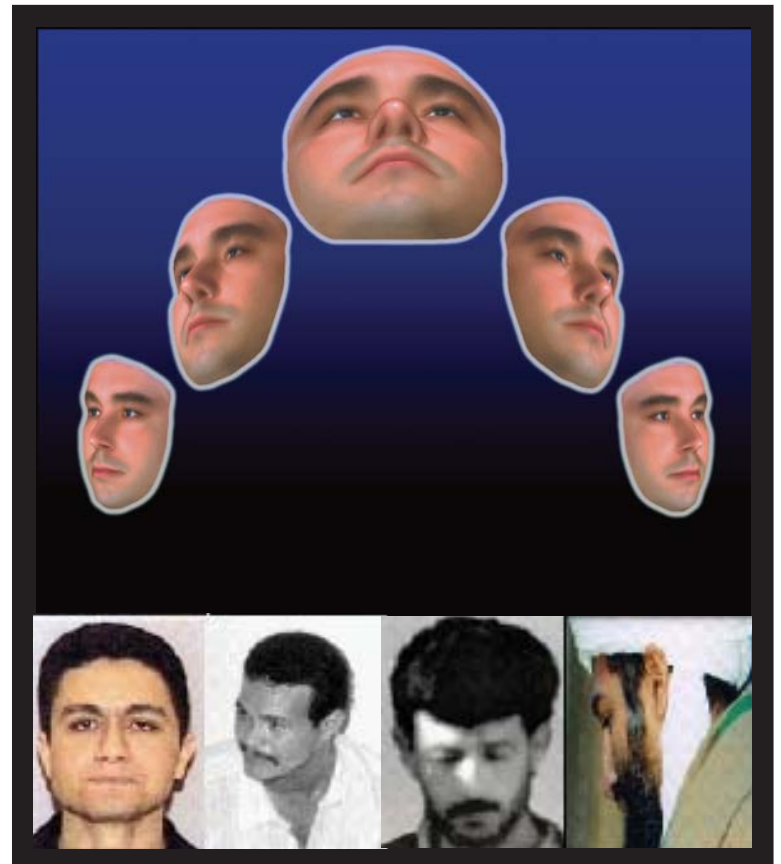
The human face is inherently a 3D object. However, current facial recognition techniques utilize 2D images to match surveillance photos with a database of "enrolled" photos. As long as the two photos (probe and enrolled photographs) are relatively similar in terms of pose and lighting, matching results can be acceptable.

However, when non-frontal surveillance photos are compared with a database of frontal enrollment pictures, matching drops dramatically to levels that are untenable. The same is true when strongly-lit surveillance photos (for example, strong sunlight from one side) are compared to a database of professionally taken, frontally-lit enrollment pictures.

The limitations of 2D facial recognition have been well-known for some time. The fundamental restriction of 2D facial recognition is that it does not preserve the 3D geometric structure of a face, which results in a limitation in performance. No one has been able to overcome these limitations...until now.

Genex has developed a breakthrough technology that harnesses the power of 3D imaging to create multiple 2D images that accurately present the face in varying pose, lighting, and expression conditions.

Use 3D Enroll™ to populate your database with a rich variety of 2D images that appear similar to snapshots obtained from real-life security cameras. The difference is clear – a dramatic increase in performance for all applications including Access Control and WatchList surveillance.



### Applications

- ◆ **Law Enforcement** - Offers rapid method of enhancing criminal photos to show varying conditions.
- ◆ **Facial Recognition** - Integrates with existing FR systems via API and offline processing capability.
- ◆ **WatchList Surveillance** - Enhances WatchList databases with additional suspect photos under varying conditions.
- ◆ **Access Control** - Increases reliability of match scores by providing additional photos for each authorized user.



# 3D Enroll™

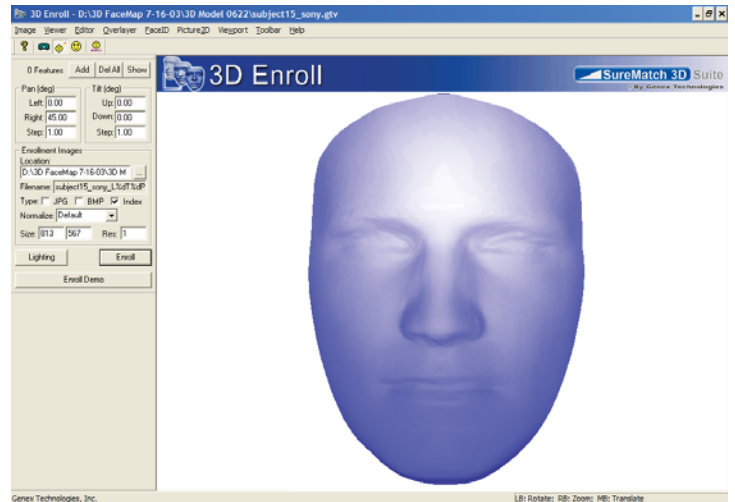
Enabling Facial Recognition

SureMatch 3D Suite

By Genex Technologies

## Features

- ◆ **Pose** – Generates accurate multiple poses of an individual in both pan and tilt.
- ◆ **Lighting** – Generates a rich variety of lighting conditions with multiple light sources.
- ◆ **Expression** – Generates common expressions by adjusting appropriate muscles in the face.
- ◆ **Simple Graphical User Interface (GUI)** – Easily create enrollment “templates” with any number of pose, lighting, or expression conditions.



Advanced Lighting Models: 3D Enroll allows users to create complex lighting scenarios with multiple light sources, light diffusion options, specularity, and other variables.

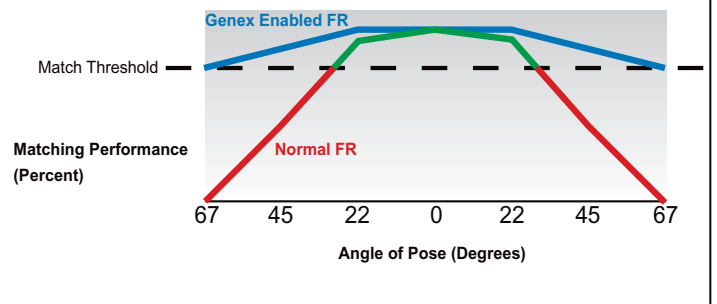
## Benefits

- ◆ **Significantly Improved Performance** – With input from either 3D FaceMap or 3D FaceCam, the 3D Enroll application generates substantial performance benefits. 3D Enroll provides a practical but powerful solution to overcome the difficulties inherent in facial pose, lighting, and expression variations that occur in real-life applications.
- ◆ **Seamless Integration** – 3D Enroll integrates seamlessly with most leading facial recognition solutions to automatically enroll multiple 2D pictures into an operational facial recognition database. For more information on available solutions, please contact Genex today.

## Enhanced Performance

### Genex-Enabled Facial Recognition

outperforms normal facial recognition across the board when using 3D FaceMap’s models and 3D Enroll’s pose and lighting generator.



\*Data represented above is based upon limited testing at Genex Labs.

## Specifications

- **Hardware Requirements:** Compatible with Pentium and Athlon processors. Recommended minimum of Pentium III 700 Mhz with 128 MB RAM.
- **Operating System:** Compatible with Windows 95/98/ME. Recommended Windows 2000/XP for best performance.
- **User-Controlled Pose Angles:** Set the start, stop, and step angles to automatically generate varying pose conditions.
- **User-Controlled Lighting Conditions:** Set the light direction, number of lights, and type of light to automatically generate varying lighting conditions.
- **Enrollment Templates:** Save enrollment “templates” for automatic generation using pre-set parameters.

## About Genex Technologies

Founded in 1995, Genex Technologies is a world leader in 3D imaging, 3D facial recognition, and intelligent surveillance. Genex provides simple, practical solutions to some of today’s most challenging imaging needs.

