

# VeriLook 3.2



## Face Recognition SDK by Neurotechnology

VeriLook SDK is based on the VeriLook PC-based face recognition technology and is intended for biometric systems developers and integrators. It allows rapid development of biometric applications using functions from the VeriLook library, which ensure high reliability of the face identification. VeriLook SDK enables 1:1 and 1:N matching modes, simultaneous multiple face detection, processing and identification with a comparison speed of 100,000 faces per second.

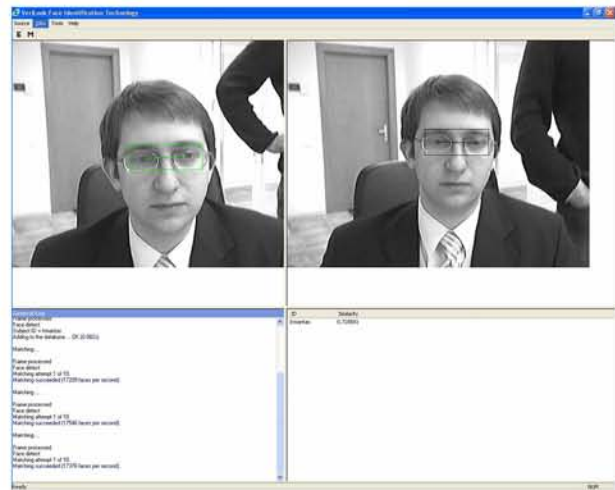
VeriLook can be easily integrated into the customer's security system. The integrator has complete control over SDK data input and output.

VeriLook SDK includes Camera Manager library for Microsoft Windows and Linux which allows to perform simultaneous capture from multiple cameras.

The following VeriLook 3.2 SDKs are available:

VeriLook 3.2 Standard SDK is intended for PC-based biometrical application development. It includes Matcher and Extractor components, programming samples and tutorials, camera manager library and software documentation. The SDK allows the development of biometric applications for Microsoft Windows, Linux or Mac OS X operating systems.

VeriLook 3.2 Extended SDK is intended for biometrical Web-based and network application development. It includes all features of Standard SDK. Additionally, the SDK contains sample client applications, tutorials and a ready-to-use matching server.



System requirements for VeriLook Matcher and Extractor components:

- PC with x86 compatible CPU (2 GHz processor or better is recommended);
- Optionally, camera or webcam (recommended frame size: 640 x 480);

Microsoft Windows specific:

- Microsoft Windows 2000/XP/2003/Vista;
- Microsoft DirectX 8.1 or later;
- Microsoft XML Parser (MSXML) 3.0;
- Microsoft GDI+ library;

Linux specific:

- Linux (based on glibc 2.5 or newer);
- Video4linux;

Mac OS X specific:

- Mac OS X (version 10.3.9 or newer);
- QuickTime 6 or later;

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## Why VeriLook?

Neurotechnology has developed a PC-based face recognition algorithm, VeriLook 3.2, designed for biometrical system integrators. VeriLook 3.2 offers capabilities of advanced and convenient facial identification systems at a reasonable cost.

**Reliability.** The VeriLook 3.2 algorithm has been tested with standard face databases (FERET, XM2VTSDDB and others). The results are one of the best among existing face identification systems on the market.

**Speed.** VeriLook 3.2 face enrollment time is less than 0.3 sec. and matching speed is 100,000 faces per second in 1:N identification mode. To confirm these results with your samples, please try VeriLook algorithm demo application.

**Live face detection.** A conventional face identification system can be easily cheated by placing a photo of another person in front of a camera. VeriLook is able to prevent this kind of security breach by determining whether a face in a video stream belongs to a real human or is a photo.

**Multiple face processing.** VeriLook 3.2 detects all faces in the current frame and can process all of them simultaneously.

VeriLook doesn't require any specific hardware. The face image can be obtained from a webcam or other low cost camera. Image processing and recognition are performed on an ordinary PC.

Biometrical template record can contain multiple face samples belonging to the same person. These samples can be enrolled with different face postures and expressions, from different sources and in different time thus allowing to improve matching quality.

## VeriLook Algorithm

The VeriLook 3.2 face recognition algorithm implements advanced face localization, enrollment and matching using robust digital image processing algorithms:

- Fast and accurate face localization for reliable detection of multiple faces in live video streams and still images.
- Simultaneous multiple face processing and identification in single frame. All faces on the current frame are detected in 0.07 sec. and then each face is processed in 0.13 sec.
- Face quality threshold can be used during face enrollment to ensure that only the best quality face template will be stored into database.
- The VeriLook 3.2 face template matching algorithm compares 100,000 faces per second.
- Applications implemented using VeriLook SDK can handle large face databases, as one face features template is only 2.3 Kbytes.
- Features generalization mode generates the collection of the generalized face features from several images of the same subject. Then, each face image is processed, features are extracted, and the collections of features are analyzed and combined into a single generalized features collection, which is written to the database. This way, the enrolled feature template is more reliable and the face recognition quality increases considerably.
- VeriLook has certain tolerance to face posture that assures face enrollment convenience: rotation of a head can be up to 10 degrees from frontal in each direction (nodded up/down, rotated left/right, tilted left/right).

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