

## Applications

- Door Access Systems
- Driver / Vehicles Registration
- Face based Media Searching
- Behavior Monitoring Systems
- Footfall Counting
- Enterprise Access Control

## Overview

Video analytics is an emerging technology for security industry. With intelligent video analysis, surveillance systems become smarter and provide useful alerts without the need of operator's presence. At offices, factories, malls or even in homes, one can easily monitor places of interest with sophisticated software that makes detecting threats or unwanted visitors simple and effective.

## Solution

Aftek's video analytics components library caters to security systems' strong need of intelligent video analysis such as object classification / detection, face recognition and motion detection. It provides an effective personal identification system based on face images as it works without participant's co-operation or knowledge unlike fingerprint, retinal or iris scan systems.

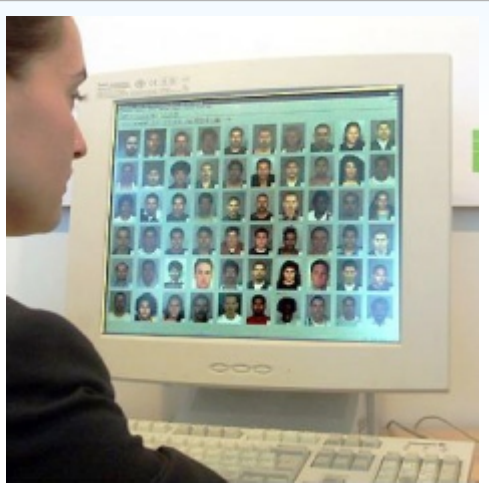
Aftek's solution offers various software components in the form of SDK that can be directly integrated in existing security systems.

## Application Areas

Aftek is focusing to provide video analytics based services using object detection, face detection and recognition solutions in security products such as video door phone, surveillance based security systems in banks, malls etc.

### Major application areas are:

Application Area	Usage
<b>Access control systems</b>	Physical access control, computer / enterprise security control, home door access systems
<b>Facial Verification / identification systems</b>	e-Governance systems - registration and notary services, driver licenses, transport systems
<b>Smart surveillance</b>	Malls screening – for valued repeat customers entering a mall / VIPs, people / footfall counting, attendance systems
<b>Casino / super-shops</b>	Filtering suspicious people based on pre-populated database. This system can be also used for identifying VIPs / esteem customers from service perspective
<b>Face search engine</b>	Facial recognition based media indexing tools for searching multimedia content
<b>Safety systems</b>	Behavior monitoring in an eldercare / childcare facility, alert system based on no eyelid movement



## About Aftek

Aftek Limited is a full spectrum technology services company from India. Over last 20 years Aftek has gained significant exposure to variety of technologies. Rich technological capabilities, focused investments in Research & Development and industry exposure enables us to reach beyond the basic IT services to design and deliver projects, products and implement end-to-end solutions to customers in variety of industries. Our service spectrum covers key services as Hardware Development, Firmware Development, Embedded Systems, Application Development, Application Maintenance and Testing Services.

## How it works

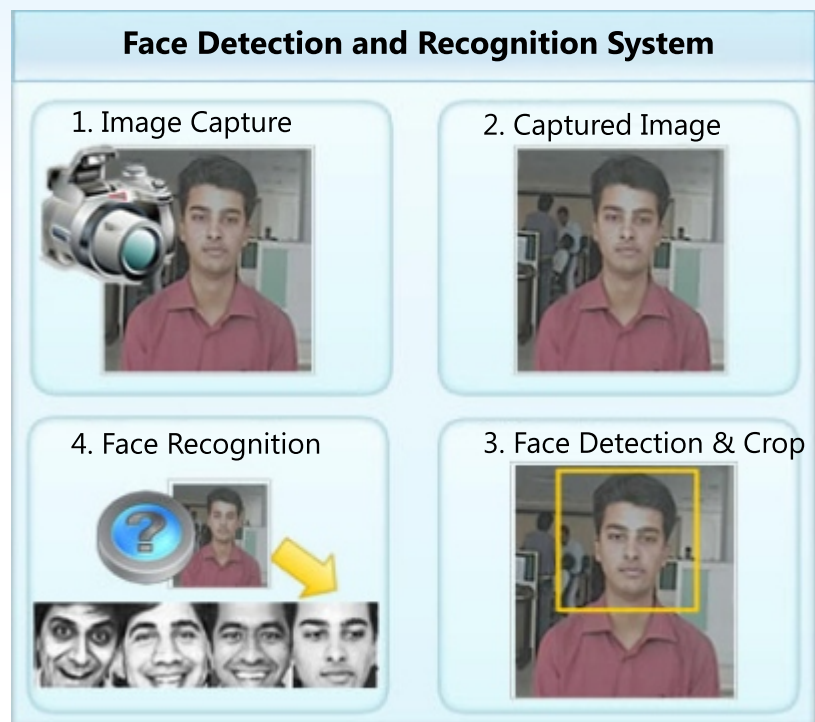
Aftek's SDK can be broadly categorized in subsystems for face / object detection, face cropping, face training and face recognition.

- Face training creates face database of known faces
- Face detection allows multiple faces to be detected from an image, which can be either a still photograph or video frame of live stream
- Face cropping allows extraction of detected faces as separate images
- Face recognition finds a nearest match to the given facial image from the database of known faces

The SDK includes ready to use applications for face training and face recognition.

Because of the robust interface and high configurability, customer can choose required functionality as per need. Also, care is taken while handling illumination variations, which ensures high accuracy even in changing illumination conditions.

### Pictorial representation of face detection and face recognition:



## Technology Highlights

- Accurate and robust face detection and recognition system
- Ability to extract face images from any type of media contents including video streams and still images
- Low footprint of training database
- Highly scalable training database
- Invokes certain image pre-processing techniques like intensity normalization, face orientation to enhance performance
- Implements various approaches like Eigenfaces, DCT, PCA and LDA
- Verification time as small as 20 milliseconds