NeoFace® Watch

High Performance Face Recognition

John Smith

Missing Person

Eva Christina

Person of Interest

Answering the need for Robust Face Recognition

For real-time or post-event, handling the most complex and large-scale use cases

One platform for surveillance, search, identification and ID verification

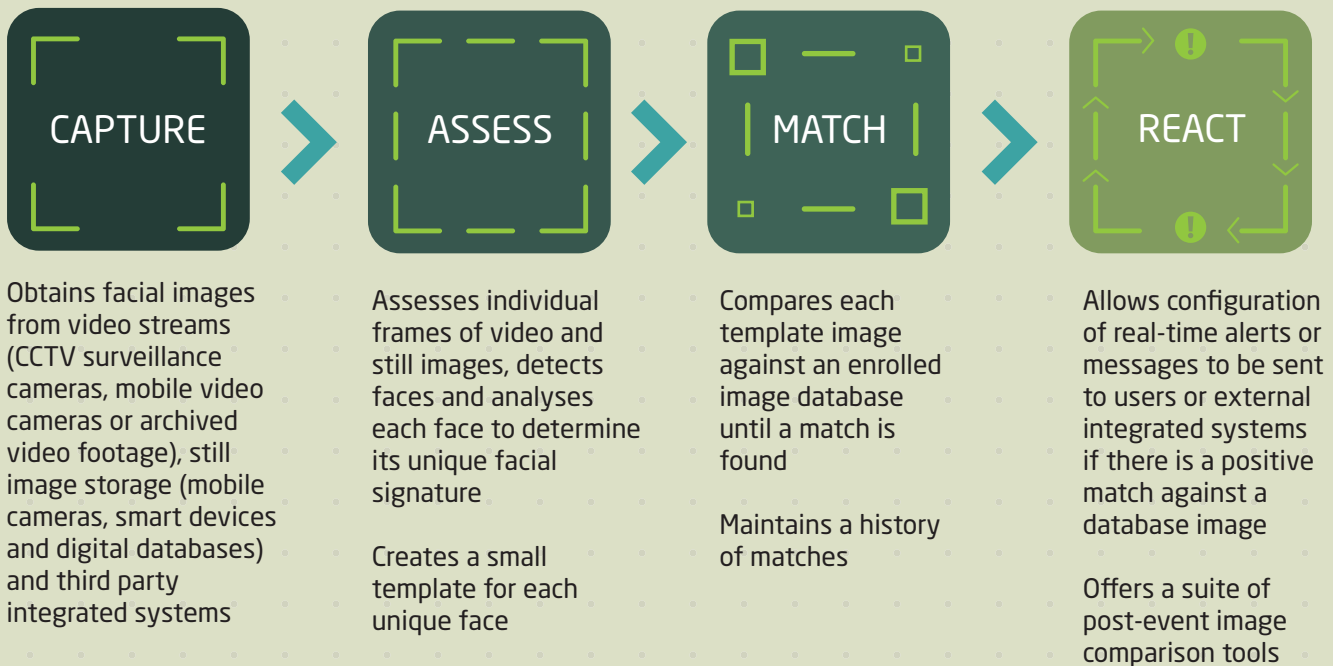Most accurate and fastest face recognition software application available

NeoFace® Watch is a high performance, highly scalable face recognition software application, providing the most accurate and fastest results for the most demanding real-time or post-event face recognition use cases: large volumes of data throughput, large numbers of users, large numbers of devices, large scale deployments.

NeoFace® Watch has been proven to work in the real world, not just in the laboratory. A robust algorithm tested and improved over years in actual deployments, NeoFace® Watch overcomes challenges such as crowded environments, poor lighting, moving subjects and multiple variables as small yet significant as spectacles, hats and scarves.

How NeoFace® Watch works

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HOW IT WORKS

CAPTURE → **ASSESS** → **MATCH** → **REACT**

CAPTURE
Obtains facial images from video streams (CCTV surveillance cameras, mobile video cameras or archived video footage), still image storage (mobile cameras, smart devices and digital databases) and third party integrated systems

ASSESS
Assesses individual frames of video and still images, detects faces and analyses each face to determine its unique facial signature

Creates a small template for each unique face

MATCH
Compares each template image against an enrolled image database until a match is found

Maintains a history of matches

REACT
Allows configuration of real-time alerts or messages to be sent to users or external integrated systems if there is a positive match against a database image

Offers a suite of post-event image comparison tools

Why NeoFace® Watch?

High Performance
In regular tests by the United States' NIST laboratories, NeoFace® Watch has an error rate of less than half of the nearest competitor and handles 3.02 million searches per second, significantly faster than the nearest competitor.

Easy to Implement
We use common off-the-shelf hardware, including IP cameras, networks, servers and, where possible, existing infrastructure. NeoFace® Watch is also available for smart device applications on iOS and Android platforms.

Easy to Integrate
Using web service APIs, NeoFace® Watch easily integrates with other systems that manage videos, customer relationships and security, offering an added dimension in facial recognition competency.

Flexible
Easy-to-use system configuration tools and monitoring utilities enable customers to tailor NeoFace® Watch to specific operational requirements and ensure continued optimal operation.

Scalable
NeoFace® Watch caters to a wide range of architectural configurations to suit local deployment conditions and requirements, including multiple servers and across multiple sites. It is designed to handle millions of faces, thousands of cameras, and simultaneous user interface sessions.

About NEC's NeoFace® face recognition

Fastest

Most Accurate

Best with Low Quality Images

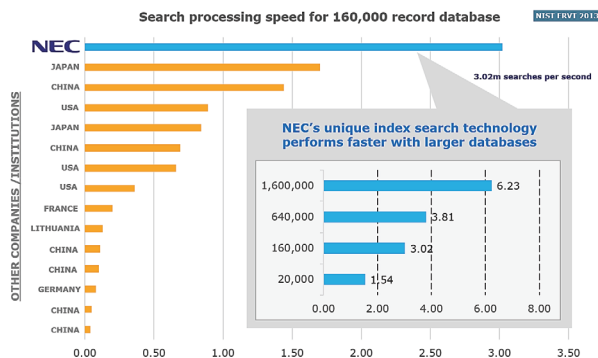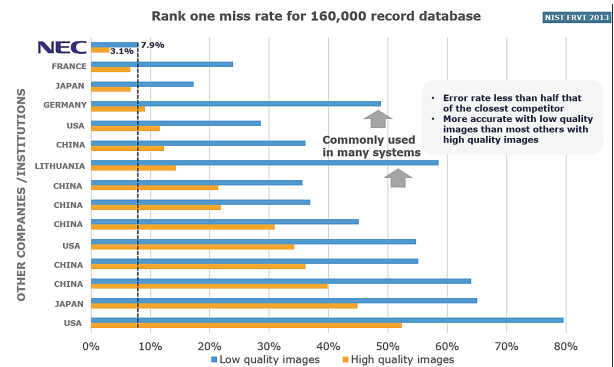**Highest Tolerance to Situational Variables**

NEC's face recognition is independently recognised as the fastest and most accurate face recognition software in the market. NEC's NeoFace® Watch was ranked top in Face Recognition Vendor Test (FRVT) 2013, Multiple-Biometric Evaluation (MBE) 2010 and Multiple Biometric Grand Challenge (MBGC) 2009, independent tests conducted by the internationally renowned US National Institute of Standards & Technology (NIST) and peer reviewed by the scientific community.

The tests position NEC's face recognition software as the most accurate face recognition software even with low-quality images. Independent tests also demonstrate that NEC provides the fastest matching capability that is the most resistant to variants in angle, age and race.

FRVT2013 Results:

Most Accurate
- At least 2x more accurate than next nearest competitor
- More accurate with low quality images than most
- Competitors rely on high quality images
- Only solution that can meet the challenges of real-world environments

Rank one miss rate for 160,000 record database — NIST FRVT 2013

NEC: 3.1% / 7.9%

- Error rate less than half that of the closest competitor
- More accurate with low quality images than most others with high quality images

Commonly used in many systems

Low quality images / High quality images

Search processing speed for 160,000 record database — NIST FRVT 2013

NEC: 3.02m searches per second

NEC's unique index search technology performs faster with larger databases

Records	Searches/sec
1,600,000	6.23
640,000	3.81
160,000	3.02
20,000	1.54

Fastest
- For small and large databases
- 3 million+ searches per second
- 2x faster than next nearest competitor
- 35x faster than some commonly used systems

Using NeoFace® Watch

Real-time

Video
Surveillance and monitoring to identify persons of interest from CCTV and mobile video cameras

Still image
Searching images captured from mobile cameras and smart devices in real-time against databases of persons of interest

Post-Event

Video
Analysis of recorded video to identify persons of interest very quickly

Still image
Analysis of images captured from video stills, mobile cameras and smart devices against databases of persons of interest

Integration

Integration with other systems
Obtaining video or still images from external systems and notifying those systems if a system alert is triggered

Matching platform
Using the NeoFace® Watch matching platform to compare two images, or single images against a centrally held database of persons of interest, returning the match score generated

Verticals

Police & National Security
Search for instances of persons of interest captured on camera, with analysis of their appearances across location and time

Transportation
Surveillance of public or restricted areas, allowing for alerts to be sent if suspicious persons are detected

Hospitality
Enable VIPs and high value customers to access premier services such as priority check-in, facilitate faster queue management and provide a personalised experience

Retail
Recognise and reward VIP customers who opt for improved, customised service whenever they arrive

Gaming
Identify VIPs or members, and detect persons from a known list who are barred from gaming activities, generating automatic alerts

Mega Events
Detect potential troublemakers in a stadium or other large arena, by analysing their faces and identifying past offenders barred from such events