

Download
now at
faceAPI.com



faceAPI



The Real-Time Face Tracking Toolkit for Developers and OEMs



faceAPI

The Real-Time Face Tracking Toolkit for Developers and OEMs

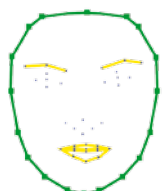


faceAPI enables Desktop VR and 3D effects using just a web camera.

Track and understand faces like never before with faceAPI from Seeing Machines - now available for license.

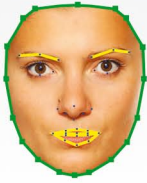
faceAPI turns any camera or standard webcam into a 3D face tracking device – no other hardware required. Designed for developers, faceAPI streamlines the integration of Seeing Machines world class face-tracking technology into your product or software application. Our state of the art image processing techniques detect and track faces as they move, delivering information on appearance, position, rotation, key facial features and facial expression.

3D Head-Pose Tracking: faceAPI tracks the position and rotation of the head in X, Y and Z, relative to the camera. Know where your users are, know if they're paying attention, detect head nods, shakes and other head gestures. This six degree-of-freedom tracking information is normally only available with specialized motion capture hardware.



Facial Landmark Detection: faceAPI discerns the position of key locations on the face such as eye corners, mouth corners, and the tip of the nose. Understand where your viewers' eyes are in 3D for Desktop VR, autostereoscopy and 3D visualization applications.

Facial Expression Tracking: real-time lip and eyebrow tracking delivers facial expression information for animating avatars, recognizing when users are talking, and detecting moods.



Face Texture Extraction: faceAPI outputs the pose-normalized image of the face upon commencement of tracking. This face texture information is annotated with facial landmarks, and can be used to skin avatars or 3D models.

faceAPI gives your development team the ability to quickly add face-tracking functionality for locating and tracking faces and facial features in images and video. faceAPI is automatic and simple to integrate, and handles all image processing itself, removing the need for computer-vision expertise. faceAPI is structured as a library of C header files, a Windows DLL, concise HTML documentation, several sample applications, a set of open-source object-oriented wrapper classes (C++), a tool for calibrating lenses, and dependent redistributable third-party APIs suitable for including in an application installer program.

Applications

- Interactive 3D Games, Virtual Worlds
- Humanoid Robotics and AI Interaction
- Performance-driven Avatar Animation
- Automotive Advanced Driver Assistance Systems (ADAS)
- Smart Screens, Billboards, Kiosks
- 3D Displays
- Advanced, adaptive visualisations
- Intelligent Video Conferencing



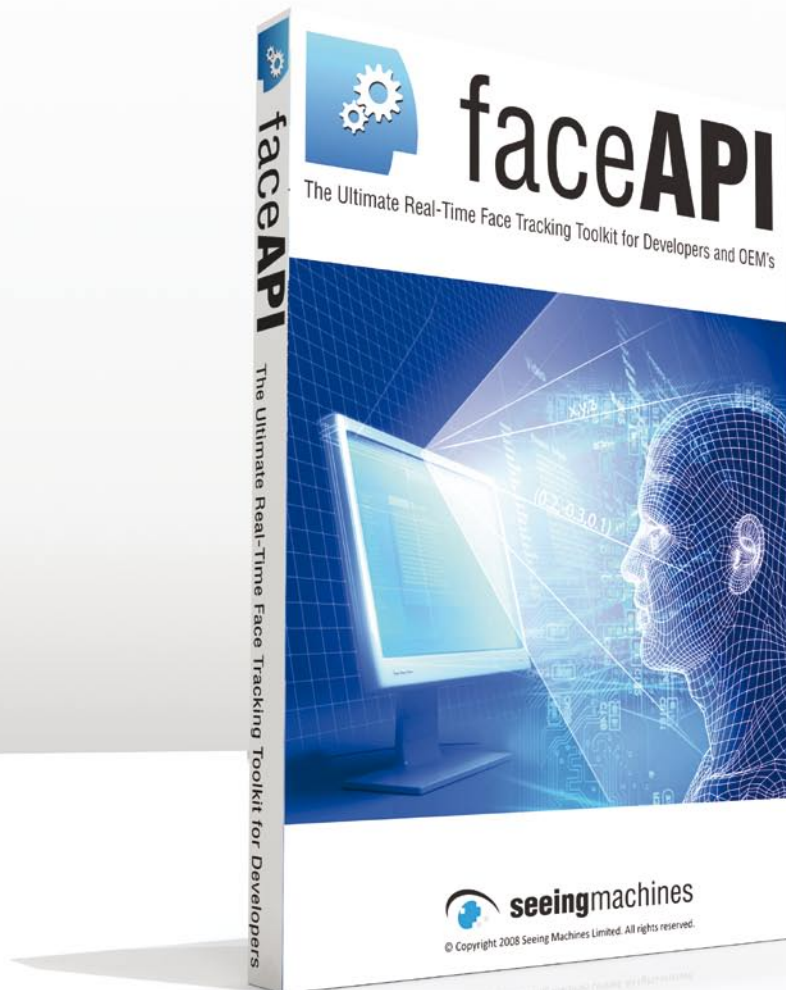
Advantages

- 3D face-tracking from a webcam or image-stream
- Unrivalled performance & capabilities leveraging unique, patented tracking algorithms
- Completely automatic operation – zero user interaction required
- Ultra-robust to changes in facial expression, illumination, and head motion
- Straightforward operation & deployment

faceAPI is available now under both development and production licenses. We have licensing models that suit a wide variety of business types, and non-commercial licenses are available. To find out how your application can be powered by faceAPI, please visit www.faceapi.com and contact our team.

faceAPI Performance

Tracking State	HeadTrackerV1	HeadTrackerV2	Tracking a face at framerate	Initializing State	HeadTrackerV1	HeadTrackerV2	Finding a new face
Min Face Size (pixels)	40.00			Min Face Size (pixels)	40		Distance between outer eye corners
Max Face Occlusion (%)	50.00			Head Rotation X (deg)	< 15		Horizontal axis (ear to ear)
Head Rotation X (deg)	-20<X<45	-30<X<60	Horizontal axis (ear to ear)	Head Rotation Y (deg)	< 15		Vertical axis (up through head)
Head Rotation Y (deg)	-30<Y<30	-90<Y<90	Vertical axis (up through head)	Head Rotation Z (deg)	< 30		Camera axis (nose)
Head Rotation Z (deg)	-90<Z<90		Camera axis (nose)	Time to Acquire (typical) (secs)	0.3 - 3.0		Assuming head is within in geometric constraints
Positional Error (cm)	<1cm		Even illumination, no occlusion	CPU Load (Active) (%)	50%		Intel Core-2 Duo, 2.4GHz, 4MB Cache
Rotational Error (deg)	<3 deg		Even illumination, no occlusion	Searching State	HeadTrackerV1	HeadTrackerV2	Quick recovery from tracking failure
CPU Load (30hz USB webcam) (Total% / Process%)	12% / 5%	30% / 25%	Intel Core-2 Duo, 2.4GHz, 4MB Cache, Logitech Quickcam Pro 5000	Recovery Conditions	Face front, no occlusion	Any pose, no occlusion	
CPU Load (60hz firewire) (Total% / Process%)	6% / 1%	8% / 1%	Intel Core-2 Duo, 2.4GHz, 4MB Cache, PointGrey Flea	Recovery Time	1 frame		
				CPU Load (%)	20%		Intel Core-2 Duo, 2.4GHz, 4MB Cache



Seeing Machines • US Tel: 1-888-393-4293 • www.SeeingMachines.com
Level 1 • 11 Lonsdale St • Braddon • ACT • 2601 • Australia
T: +61 2 6103 4700 • F: +61 2 6103 4701 • bizdev@seeingmachines.com



© Copyright 2008 Seeing Machines Limited. All rights reserved.