

# Release notes

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## 24 Nov 2023 visage|SDK 9.1 (Stable)

**Platforms:** *all*

### Introduced new landmarks in lips, eyes, and eyebrow regions

- In addition to additional landmarks, a small improvement in the accuracy of detected landmarks has been obtained.

### Significantly increased overall tracking precision by reducing jitter compared to 9.0

- Additional reduction of jitter is available by enabling the image denoising feature. The feature has a significant impact on speed depending on the size of the input image; therefore, it is disabled by default but can be enabled in configuration settings.

### Improved overall 3D model fitting quality

- General fitting quality has been improved with a small trade-off in fitting speed compared to 9.0. The system still works within real-time constraints.
- Additional improvement in initial fitting quality for rotated faces has been obtained.

**Fixed VisageFeaturesDetector crashes when attempting to input an image containing multiple faces, while the number of detections is limited to 1**

**Platforms:** *HTML5*

### Optimized memory usage

- visage|SDK library now allocates half as much memory while still providing enough memory to run all visage|SDK modules in the same thread. This optimization prevents crashes in Google Chrome for Android phones with limited memory space for Google Chrome browser. operations.
- The system now works in strict mode

## 17 Jul 2023 visage|SDK 9.1b3

**Platform:** *all*

### Significantly increased precision of face alignment

- by reducing landmark jitter by around 88% compared to 9.1b2 and 96% compared to 9.0

### Improved speed of face tracking pipeline in comparison with 9.1b2

- by optimizing the model fitting procedure
- depending on the device, speed is up to 2ms slower when compared to 9.0, however results are still within the expected frame rate for real-time performance

**Fixed FaceDetector sample crash when attempting to open an image containing multiple faces**

## 03 Jul 2023 visage|SDK 9.1b2

**Platform:** *all*

### **Increased tracking accuracy of lip region**

- tracking algorithm tracks additional 16 points in the lip region

### **Increased tracking overall precision**

- by reducing the jitter of landmarks by around 30%

### **Improved fitting quality**

- by simplifying the flow of the algorithm and by increasing the range in which shape units are recalculated
- tradeoff was reduced speed of the whole face tracking pipeline by 4ms in comparison to 9.0

### **Platform: HTML5**

### **Optimized memory usage**

- visage|SDK library now allocates half as much memory while still providing enough memory to run all visage|SDK modules in the same thread. This optimization is especially important to prevent code crashes in Google Chrome for Android on phones with limited memory space for Google Chrome browser operations.
- The system now works in strict mode

## **08 Dec 2022 visage|SDK 9.0**

### **Platforms: all**

### **New tracking algorithm models**

Introducing smaller and faster tracking algorithm models while retaining the same accuracy which completely replace the old models that will no longer be distributed.

### **Platform: HTML5**

Reduced size of visage|SDK libraries.

## **15 Jul 2022 visage|SDK 9.0b1 (Beta)**

### **Platforms: all**

### **New age and gender estimation models**

Introducing smaller, faster and more accurate age and gender estimation models.

### **Multi-frame analysis module**

Introducing new API functions for multi-frame age and gender analysis to ensure more stable and accurate results

### **Fixed multi-face tracking when the fitting is disabled**

### **New tracking and detection output parameter facial bounding box**

Introducing a new parameter for obtaining the bounding box of each tracked/detected face

### **Slightly improved face tracking precision**

Improved physical contour tracking

### **Platform: Android, iOS**

### **GPU support**

visage|SDK algorithms now can be offloaded to the GPU

### **Platform: macOS**

### **Support of macOS ARM architecture**

visage|SDK package for macOS provides optimized libraries for ARM and x86\_64 chip architectures

## 14 Dec 2021 visage|SDK 8.8

**Platforms:** *all*

### **Liveness API exposure**

The usage of the Liveness preset actions is now also available through the FaceRecognition license.

### **Upgrade of VNN algorithm for tracking and detecting masked faces**

Face tracking and detection algorithms are enhanced so that they can track and detect faces wearing protective masks of various colors and patterns.

### **Removal of the legacy tracking and detection algorithm**

With the improvement of the quality and performance of the VNN algorithm, we have achieved state-of-the-art face tracking and detection. In order to simplify usage and reduce the data, all those algorithms that are no longer competitive are removed.

### **Switching from visible to physical contour**

Introducing the physical contour the stability and accuracy of one of the main visage|SDK features – 3D head-pose estimation has been improved. Improved the usability of the visage|SDK for many market fields such as DMS, Virtual Try-on, and Gaming.

### **Swift wrapper**

It is now possible to develop with the visage|SDK in Swift language on iOS and macOS using the newly implemented Swift wrapper

[Known issues](#)

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## 16 Jul 2021 visage|SDK 8.8b2 (Beta)

**Platforms:** *Windows, Android, iOS, Linux, macOS, RedHat, HTML5*

### **Face tracking and detection with protective masks**

Face tracking and detection algorithms are enhanced so that they can track and detect faces wearing protective masks of various colors and patterns.

### **Switching from tracking and detection of visible contour points to physical contour points**

Introducing the physical contour the stability and accuracy of one of the main visage|SDK features – 3D head-pose estimation has been improved. Improved the usability of the visage|SDK for many market fields such as DMS, Virtual Try-on, and Gaming.

**Platforms:** *iOS*

### **Swift wrapper**

You can now develop with visage|SDK using Swift language on iOS using a newly implemented Swift wrapper

[Known issues](#)

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## 30 Sep 2020 visage|SDK 8.7 (Stable)

**Platforms:** *Windows, Android, iOS, Linux, macOS, RedHat, HTML5*

### **New face recognition model**

Introducing a smaller, faster, and more accurate face recognition model.

### **The new and improved face detection model**

Introducing improved face detection model, more robust to various challenging conditions such as faces with high variability in scale, illumination, pose and occlusion.

### **New fast mode of VNN tracking algorithm**

Introducing new VNN algorithm fast mode which significantly improves performance at the cost of feature points precision while keeping the same precision of head pose.

### **Improved tracking performance of VNN algorithm**

VNN tracking algorithm now works with higher FPS, with significant improvements on devices such as high-end mobile and desktop devices.

**Platforms:** *Android, iOS*

### **Reduced tracking noise in VNN tracking algorithm on mobile platforms**

New VNN tracking models now work with less tracking jitter.

[Known issues](#)

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## **31 Jul 2020 visage|SDK 8.7b2 (Beta)**

### **The new improved face detection model**

Introducing improved face detection model, more robust to various challenging conditions such as faces with high variability in scale, illumination, pose and occlusion.

### **New fast mode of VNN tracking algorithm**

Introducing new VNN algorithm fast mode which significantly improves performance at the cost of feature points precision while keeping the same precision of head pose.

### **Improved tracking speed of VNN algorithm**

VNN tracking algorithm now works with higher FPS, with significant improvements on devices such as high-end mobile and desktop devices

### **Reduced tracking noise in VNN tracking algorithm (iOS, Android)**

New VNN tracking models now work with less tracking jitter.

[Known issues](#)

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## **08 May 2020 visage|SDK 8.7b1 (Beta)**

### **New runner on mobile platforms – Android and iOS**

Optimized for running neural networks and significantly improving the performance of visage|SDK algorithms.

### **New Face recognition model**

Introducing a smaller, faster, and more accurate face recognition model that completely replaces the old model that will no longer be distributed.

The model is available for desktop platforms and on mobile platforms.

[Known issues](#)

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## **10 Feb 2020 visage|SDK 8.6.1 (Stable)**

### **A novel experimental tracking algorithm – VNN – introduced**

The new algorithm minimizes jitter, increases tracking accuracy and robustness but reduces tracking performance (speed). It is demonstrated in ShowcaseDemo and FaceTracker2 samples via new *Ultra* tracking configuration.

### **New neural network runner provided – OpenVINO™ toolkit**

Significantly improves the performance of age estimation, face recognition and face tracking with VNN algorithm on Intel 64-bit processors.

OpenVINO is a trademark of Intel Corporation or its subsidiaries.

## Ear tracking

NEW FEATURE

Additional 24 feature points on ears are now tracked (12 points per ear). Ear tracking is configurable through the tracker configuration file or API.

## Iris tracking

NEW FEATURE

Face data from tracker and detector now includes information about iris diameter.

## VisageConfiguration API introduced

It is now possible to modify specific tracker configuration parameters via an interface during tracking.

## Age estimation accuracy improved

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## 30 Mar 2019 visage|SDK 8.5 (Stable)

### Improved smoothing filter

Smoothing of feature points is performed using multiple filters. For still face, higher amount of smoothing is applied while fast movements are less smoothed in order to avoid noticeable delay. Increased stability of feature points and head position especially in profile and half-profile pose.

### Refactoring of frame preprocessing resulting in more stable FPS and improved accuracy on high-resolution frames

The core tracking loop was re-implemented to make the tracking frame rate less dependent on the size of the face in the image. This fixes performance drops in cases where the face takes up a small portion of the frame. Additionally, noise introduced by resizing of higher-resolution frames is reduced which results in more stable tracking.

HTML5

### API upgraded to use typed arrays

API for fetching tracking data has been modified to return typed arrays. Improves performance and simplifies memory management of tracked data.

IOS

ANDROID

**ShowcaseDemo** introduces example of tracking from video including source code.