



# Introducing SAFR™ for Camera-Equipped Devices

Integrate world-class facial recognition into products and solutions at the edge or entirely offline with SAFR SDKs and REST APIs.

Edge device and IoT designers and developers have been challenged to implement facial recognition technology in their stack. These devices are constrained by memory, model size, and cost. We developed the SAFR SDKs to deliver the extraordinary accuracy and performance of SAFR facial detection, characterization, and recognition in a highly efficient compact size, with minimal costs.

## Five reasons to develop with SAFR SDKs:

### 1. World-class accuracy and performance for edge & IoT devices

There's no need to choose between accuracy or model size. SAFR achieves best-in-class accuracy in a small footprint with the Embedded SDK.

### 2. A fraction of the cost of cloud services with price certainty

Lower TCO or eliminate cloud and bandwidth costs altogether with the Embedded SDK running completely offline.

### 3. Data is private and secure to protect your customers

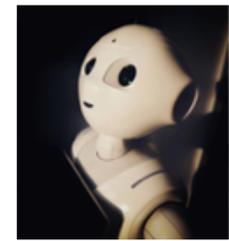
Maintain all data locally and retain total control over data retention policies.

### 4. Easily incorporate into your stack

Deploy on device, in app, in our cloud, locally, or entirely offline on all major operating systems and platforms.

### 5. Innovation from an established US-based company

SAFR is from RealNetworks, a US company with a global footprint and a 25-year history of innovation.



World-class accuracy and performance for a wide range of use cases:

Kiosks • Robotics • Security • Smart Home • Smart Office • Wearables • Automotive  
Toys • Wellness • Retail • Entertainment

# SDK Specifications

## The SAFR SDK

Access the full capabilities of the SAFR platform through RESTful APIs on all major platforms and operating systems

PLATFORMS	Windows, Linux, macOS, Android, iOS
FEATURES	<ul style="list-style-type: none"><li>• Detection and tracking in live video streams</li><li>• Recognition and DB matching</li><li>• Characterization (age, gender, sentiment)</li><li>• REST APIs</li><li>• Identity repository and management</li><li>• Video feed management</li></ul>
ACCURACY	99.87% LFW, 0.0334 FNMR
DETECTION SPEED	~15-60ms, @1024p and 15FPS
RECOGNITION SPEED	<100ms per face
GPU SUPPORT	NVIDIA

## The SAFR Embedded SDK

Add high-performance facial recognition and keep data secure on devices that operate completely offline

PLATFORMS	Windows, Android
FEATURES	<ul style="list-style-type: none"><li>• Image-based detection</li><li>• Image-based recognition</li><li>• Face signature store (+/- 10,000)</li></ul>
ACCURACY	99.87% LFW, 0.0334 FNMR
DETECTION SPEED	900ms @720p on a single core, 1.8MHz ARM processor
RECOGNITION SPEED	300ms @720p on a single core, 1.8MHz ARM processor
GPU SUPPORT	NVIDIA

## SAFR REST APIs

Web access to SAFR detection, recognition, and management of recognized persons and faces. Additional interfaces provide object recognition, configuration, user management, and recognition event management.

## The industry-leading performance and accuracy of the SAFR Platform

The SAFR SDKs are optimized for embedded systems and edge computing, achieving an unprecedented blend of accuracy, speed, and efficient size. The July 2019 National Institute of Standards and Technology (NIST) results\* found that SAFR was the fastest and most compact among facial recognition algorithms for camera-unaware faces (wild images) with less than 0.0335 False Non-Match Rate. Compared to the other leading algorithms that rank high in accuracy, SAFR is two times faster than average, and 35 percent smaller than the second-smallest algorithm.

With 99.87 percent proven accuracy in the University of Massachusetts Labeled Faces in the Wild test, the SAFR SDKs provide world-class facial recognition performance with low false rates, multiple face detection, and extremely low response times on live video streams. Multiplatform and deployment neutral (supporting on-premises or cloud solutions), the SAFR SDKs perform within resource constraints like processor cycles and storage memory.

- Fast & Accurate
- Distributed and Flexible
- Built for Privacy
- Deployment Neutral
- Actionable

## For more information or a trial account:

visit [SAFR.com/developer](https://safr.com/developer)

**realnetworks**

\*Results shown from NIST do not constitute an endorsement of any particular system, product, service, or company by NIST. [www.nist.gov/programs-projects/face-recognition-vendor-test-frvt-ongoing](http://www.nist.gov/programs-projects/face-recognition-vendor-test-frvt-ongoing).