INNOVATRICS

SmartFace

One-pager

SmartFace Embedded

Facial Biometrics for OEM & Edge Devices

Innovatrics SmartFace Embedded is the core engine that processes video streams with the ability to detect faces even in large crowds or in low-light environments. It has been optimized for the recognition of covered and obscured faces from very low-quality inputs.

Utilizing a proprietary matcher, which is one of the fastest and most accurate according to NIST, our facial biometric system notifies a user of detected faces within a few milliseconds, as well as identification when searching through a large gallery of identities.

Make Every Camera Smart

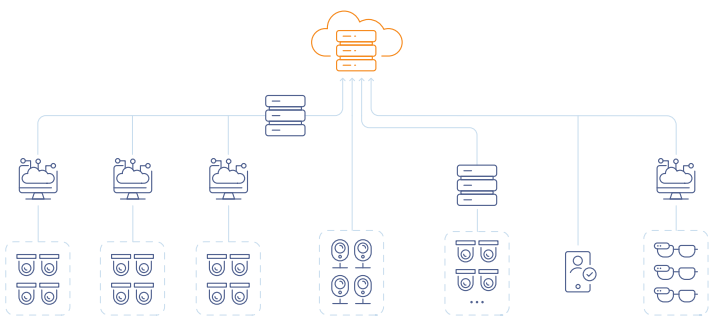
Regardless of use case and solution architecture, Innovatrics' proprietary face recognition engine can operate on a wide range of hardware platforms with optimized performance and resource utilization.

With over 15 years of engineering experience, our solution can support smart cameras, edge devices and industrial PCs, plus custom integration with various peripherals like smart glasses, access control and time & attendance terminals, smartphones, tablets, and many others.

Edge-to-Cloud SmartFace Ecosystem

Given our edge computing approach, a video feed can be pre-processed on the camera or the edge device in order to reduce the required network bandwidth and server resources needed at the central site.

Through our edge-to-cloud architecture, any system can be easily scaled and virtually support an unlimited number of cameras while protecting public spaces without missing a single important event. Moreover, SmartFace can utilize GPUs to enhance the performance of the entire system.



Key Features

- Small footprint with high performance
- HW and SW agnostic
- Custom approach and portability
- Flexible licensing
- Integrated with Innovatrics SmartFace ecosystem

Tech Box

- Lightweight C++/RUST stack
- Separate neural networks for

Facial detection | **Facial landmarks** | **Face mask de tection**

Facial attributes | **Face template extraction**

Liveness check | **People detection** | **Body parts detection**

- Customized deployment of neural networks
- 1:N identification
- Inference on CPU or NPU/GPU

x86 and ARM CPU architecture supported

Ambarella SoC, Rockchip SoC, Blaize SoM, Hailo SoM and NVidia Jetson supported

- HW video decoding/encoding
- Real-time notifications over message queue

Performance

System-on-Chip

	Face detection (HD stream)	*Facial landmarks*	*Face template extraction*	*Face indentification (1:10K)*
 **Ambarella CV22** **Quad-core ARM® Cortex-A53 CPU up to 1 GHz** 2 GB RAM CVflow® **computer vision processing**	11 ms	4 ms	30 ms	2 ms
 **Rockchip RV1109** **Dual core ARM Cortex-A7** 1 GB RAM **Rockchip NPU**	28 ms*	6 ms	41 ms	15 ms

* 640×360 px stream

System-on-Module

 **Blaize Pathfinder P1600 Embedded SoM** **Dual-core ARM® Cortex-A53 CPU up to 1GHz** Up to 8 GB RAM 16-core Blaize El Cano GSP	20 ms	5 ms	15 ms	3.5 ms
 **NVIDIA Jetson Xavier NX** 6-core NVIDIA Carmel ARM® v8.2 64-bit CPU 8 GB RAM NVIDIA Volta architecture with 384 NVIDIA CUDA® cores and 48 Tensor cores	12 ms	3 ms	20 ms	1.5 ms
 **Hailo-8™ AI Processor** Intel® Pentium® Processor N6415 1.5M Cache, up to 3.00 GHz 8 GB RAM **Hailo-8™ AI processor**	14 ms	3 ms	15 ms	1.8 ms

INNOVATRICS
building a world of instant trust

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