GRADIANT FACE

GRADIANT FACE integrates latest GRADIANT's proprietary face recognition technology, especially designed for authentication in mobility scenarios. GRADIANT FACE comprises a set of libraries ready for integration in mobile and server platforms. It is intended for biometric system integrators as well as application developers. GRADIANT FACE combines computer vision, pattern recognition and machine learning techniques, enabling fully automatic face recognition with just a look into the camera of your mobile device.

HIGHLIGHTS

— Award-winning proprietary face recognition technology.
— References in corporate access control, banking and health sectors.
— Designed and created for mobile scenarios.
— Mobile device embedded real-time processing. Fast template extraction from video sequences.
— Multiplatform: iOS, Android, Windows, Linux.
— Fully compatible biometric templates between computer and mobile platforms, allowing different system architectures (mobile embedded, client (mobile)-server, client (PC)-server).
— Biometric template protection: enhanced security and privacy protection in mobility scenarios by means of advanced cryptosystem technology.
— Increased security, convenience and availability can be achieved by the easy combination of compatible GRADIANT biometric modalities such as speaker or signature recognition.
— Built-in anti-spoofing mechanisms.

TECHNICAL DETAILS

GRADIANT FACE integrates several modules in order to provide a complete mobile authentication solution:

ACQUISITION MODULES

Acquisition and camera control modules for mobile devices allowing fast integration and development of third-party applications.

FACE DETECTION MODULE

Fast face detection and tracking, optimised for mobile devices.

Head pose estimation.

FACE TEMPLATE EXTRACTION MODULE

Face template extraction from static images or video sequences.

Face templates can be built from single or multiple face images.

Internal facial landmark detection for face alignment.

Illumination normalisation.

Face image quality assessment to ensure the acquired faces meet the requirements for system security.

MATCHING MODULE

Biometric template matching (both single-face and multiple-face templates supported), allowing an easy development of verification and identification applications.

Adaptive threshold based on target FAR/FRR rates and image quality, allowing adaptation to environmental changes.

ANTI-SPOOFING MODULE

Collaborative liveness check module: multiple methods working together to differentiate live faces from spoofing attacks.

TEMPLATE PROTECTION MODULE

Template protection for enhanced security and privacy protection in mobility scenarios through advanced cryptosystem technology.

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PLATFORMS

iOS

Minimum OS	OS device (iPhone, iPad) with iOS 8 or above
Minimum hardware	Apple A6 processor or higher (iPhone 5 or above)
Programming language	Objective C API

ANDROID

Minimum OS	Smartphone or tablet with Android 4.0 OS or above (API 14)
Minimum hardware	1.5 GHz dual core processor or higher
	Reference devices: mid-range Android devices with frontal camera quality similar to the Google's Nexus 5 or higher
Programming language	Java API

PC / SERVER

Minimum OS	Windows XP Professional, Windows 7 and Windows 8 (32 bit and 64 bit)
	Linux (32 bit and 64 bit)
Programming language	C++ API
	Java API

PERFORMANCE

Mobile device	For an iPhone 6, 1.4 GHz ARMv8-A
	0.119 seconds per template
	3125 template matchings per second
PC / Server	For an Intel(R) Xeon CPU X5675 @ 3.07GHz (single threaded)
	0.062 seconds per template
	6250 template matchings per second