Future present of technology

Connectivity · Intelligence · Security

faceIDNN

Face recognition technology

faceIDNN by Gradiant brings deep learning-based face recognition technology for user identity verification in digital on boarding and KYC processes.

Remote and secure users' identity verification has become one major need for companies with outstanding digital businesses. Along with trust and confidence, there is a clear need for improving user experience. faceIDNN enables both, secure and frictionless user's identity verification: your customer only needs to take a selfie and a photo of his/her ID card, faceIDNN does the rest. faceIDNN helps companies to meet usability and security needs:

- ✓ **Verifies your customer's face** against the photograph in his/her ID card, driving license or passport, powered by deep learning algorithms
- ✓ **Perfectly fits in onboarding processes** requiring user's ID card or passport verification
- ✓ **Prevents from spoofing attacks** by exploiting liveness detection mechanisms that combine collaborative and non-collaborative techniques
- ✓ **Robust to ageing**

Functionalities

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

Matching module

1:1 biometric template matching (both single-face and multiple-face templates supported), allowing an easy development of verification and identification applications.

Requirements

OS: Linux 64 bits (recommended Ubuntu 14.04).

Programming language: Java API

Hardware Requirements:

- ✓ Intel x64 architecture.
- ✓ Runs on both CPU and GPU (improved performance is achieved with GPU Nvidia (> 3.5 CUDA capabilities)).

Development tools:

- ✓ Java IDE (i.e Intellij idea)
- ✓ Gradle (not mandatory, but recommended)
- ✓ Docker (for environment simulation)

Performance

Recognition rates:

- ✓ Uncontrolled authentication: 99.6% accuracy in LFW.
- ✓ Controlled authentication (selfie verification): FAR = 0.1%; FRR = 0.23%.
- ✓ Onboarding scenario (selfie vs passport): FAR = 0.1%; FRR = 7.73%.

Sizes:

- ✓ SDK size: 150MB.
- ✓ Template size: ~600 bytes.

Performance

- ✓ For a reference server:
  - CPU: Inter Core I-7 860 @ 2.80GHz × 8.
  - RAM: 16 Gbytes.
  - GPU: nVidia Geforce 1050 Ti with 4Gbytes RAM.
- ✓ Single image face profile creation: 12.38 ms
- ✓ >10.000 matching per second

Package

Developer SDK for integration and deployment

* In combination with Gradiant Face Mobile

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