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FindFace
Face Recognition

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FindFace - New Generation Face Recognition

Face Recognition Revolution: Faces to track; Known criminals and suspects; Investigations; Missing children and elders; Crowds management and analytics.

Existing Technologies: Not accurate enough: too many false positives; Too slow: blacklist size is limited; Require expensive hardware.

FindFace New Generation Neural Network: Very accurate - even more accurate than a human; Very fast - searches among billion photos in less than half second.

FindFace for security

World's Best Accuracy: 95% rank-10 probability among 10K photos; 88% rank-10 probability among 1M photos; 99% verification accuracy.

World's Best Performance: Half-second search time for 1 billion photos; Unique index performs very fast search while maintaining the highest accuracy; The index needs just 20 GB for 500 million photos.

MegaFace Challenge Winner: First place among 90+ competitors, beating even Google; First benchmark to evaluate large-scale face recognition solutions; Largest real-world photo set with different poses, lighting, obstructions, etc.

Proven by FindFace.ru: A web app where everyone can upload a photo to find a person's profile on the vk.com network; 250 million photos of 100 million people; 50 searches per second on five Amazon servers.

Security Use
- Mobile software for police and transport police officers
- Fixed surveillance cameras integrated into the urban landscape
- Cameras in transport infrastructure facilities (subway, airports, railway stations)
- Cameras for government establishments, police departments, sensitive sites, etc
- Face detection and identification in a video stream: Including surveillance CCTV cameras in public spaces
- Restricted site access and database search: E.g. for fans blacklisted from a stadium
- Personal identity verification: Including entrance facilities and mobile police officers
- Monitoring movement of specific people or crowds at infrastructure facilities and in the city

FindFace for retail

High accuracy
Identification - Database 10.000 - Accuracy 93%
Verification - Comparison 1:1 - Accuracy more than 99%

You don't need to upgrade hardware
High recognition accuracy even on low-quality images and resolutions (from street and panoramic CCTV cameras, low-resolution webcams, etc.);
It is possible to integrate with the installed systems of photo and video recording.

Performance and scalability
Database Search:
2 million photos - 0,2 sec / 250 million photos - 0,3 sec / 1 billion photos - 0,5 sec
Feature vector size is less than 1 KB. 50 searches per second on five Amazon servers for 250 million photos dataset.

Sustainability to appearance changes
Face Vegetation / Glasses / Getting old / Occlusions / Head turns / Emotions

Gender, age and emotions recognition
Emotions - Recognizing of the primary and the secondary emotion among 7 basic and 50 side emotions. The EmotioNet Challenge 2017 Winner.
Age - Recognizing of the age within five years with 95% accuracy.
Gender - Recognizing of the gender with 95% accuracy.

Marketing and analytics
- General client flow to store
- Detection of specific client group
- Obtaining data about the specific client as only he enters the store
- Using the client data by a shop assistant
- Targeted offline advertisement
- Heat maps by demographic categories
- Standart routes by demographic categories

The quality of service
- Nps calculation
- The quality of the service at cashier's desk
- Loyalty program
- Analysis of promos

Security and personnel management
- Be aware of shoplifters
- Prevention of the alcohol and tobacco sales to minors
- Employees access control in store areas
- Worktime control

FindFace - Enterprise Server SDK

The FindFace SDK is a C library that provides access to the cutting-edge face recognition technology based on neural networks. The SDK allows you to quickly and accurately solve the 3 key tasks of face recognition:

Verification: It takes ~ 75 ns to compare 2 biometric samples and estimate the probability of their belonging to the same person.

Liveness check: Distinguish a live face in front of a camera from a photo on paper or mobile device screen.

Face attributes extraction: Recognize age, gender, emotions, glasses, beard, and other attributes.

Face detection: Finds face fragments in an image and returns a bounding box and control points (eyes, nose, corners of the mouth) for each fragment.

Biometric sample extraction: 500 ms is the time needed to extract a face biometric sample and save it in a temporary binary format. The sample can be later saved to a database and used for face verification.

Advantages
- Algorithm accuracy and speed
- Ability to work online/offline
- Neural networks
- High-speed calculations
- Liveness
- Multithreading support
- Friendly C/C++ code
- Face features recognition
- GPU

Typical cases
- E-gate
- Access control
- Authentication
- Wearables