BioidTech

BIOID-Face

TOP PERFORMANCE AT FACE VALUE

BIOID FACE RECOGNITION AT FOREFRONT OF INNOVATION

AI — Neural Networks / Machine Learning Leads the Way The superb accuracy of **BioID** Face Recognition for both Identification (1:N Match) and Verification (1:1 Match) is ensured by a combination of convolutional neural networks that utilize the most up to date architecture and the most progressive methods of training.

BIOID–Face is based on cutting edge biometrics. The algorithm at the core of our technology is based on convolutional neural network (CNN) that uses machine learning techniques.

Unlike "traditional" algorithms based on mathematical models, the **BIOID-Face** algorithm automatically extracts distinctive features and is robust to angles, facial expressions, pose, illumination, partial occlusions and artifacts, and low image quality.
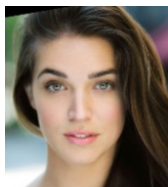
Trained on diverse databases, the algorithm is invariant across nationalities and shows high accuracy not only for Asians, Europeans and Africans, but also for different nations within these continents, different ages and genders.

BIOID-Face is ranked in the TOP-10 of most accurate face algorithm vendors in the world in NIST:
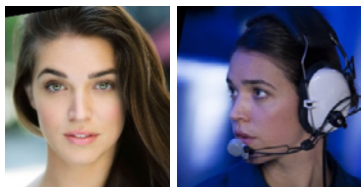
Visa dataset accuracy **TPR at FPR 10^{-5}=99.2%**

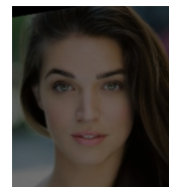---

BIOID-FACE EMBEDDED FUNCTIONS
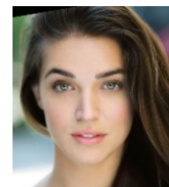
FACE DETECTION	1:1 MATCHING	1:N MATCHING	QUALITY ASSESSMENT	AGE AND GENDER RECOGNITION

APPLICABLE IN A WIDE RANGE OF MARKETS

ACCESS CONTROL

Secure, accurate and user friendly access control & time attendance using face recognition

FACE FORENSICS

Fast search of suspects identified in video records. Rapid identification of suspects and victims in fieldforensic applications

PRISION MANAGEMENT

Fast ID checking of prisioners as well as visitors

ID MANAGEMENT

Real-time verification and identification against millions of records in an enrollment database

IMMIGRATION AND PASSPORT CONTROL

Reliable identity verification for fast border corssing; entry prevention of unwanted visitors

MARKETING ANALYTICS

Biometrics plays a key role in neuromarketing market research to understand a person's emotional/ congitive response towards an event

CITY SURVEILLANCE

Online face recognition using regular CCTV camera feeds deployed in Safe Cities projects

RETAIL INTELLIGENCE

Biometrics for easier and faster payments for personalized in-store marketing

VIP IDENTIFICATION

Real-time verification and identification against millions of records in an enrollment database

LIGHTNING FAST PERFORMANCE AND ACCURACY BENEFITS

At FAR 10^{-6} For ID/Visa vs ID/Visa images **99.46%**

At FAR 10^{-6} For N:N Search **99.99%**

Upto **4ms** on GPU **25ms** on CPU* **DETECTION**

Upto **3ms** on GPU **120ms** on CPU* **EXTRACTION**

1s For search against **30 000 000** **MATCHING**

* On Core i7 7800 X 6 Cores

FOR THE NEEDS OF THE REAL WORLD	Our Technology has proven its efficiency in real-world projects working with databases including hunreds of millions faces.

AT THE SPEED OF REAL TIME	Our Technology has been employed in highly demanding nation wide projects, processing millions of operations in real time.

BIOID-FACE

OVERCOMING THE CHALLENGES OF REAL LIFE	Our System is trained on diverse databases from around the world demosntrating high accuracy irrespective of race, ethnicity or country of origin of the enrollees

AMONGST NIST TOP 10 REAL BEST IN CLASS	In the latest FRVT leader board Our Technology has been ranked as the 9th vendor over all (6th most accurate vendor, 12th most accurate algorithm).

TECHNOLOGY DIFFERENTIATORS AND BENEFITS

HIGH SPEED AND PERFORMANCE
We process up to 150 images in real time using one GPU and search against a database of 100M images in 1 second with a single CPU.

OUR HIGH-SPEED PROCESSING SAVES YOU MONEY

PROTECT YOUR SYSTEMS FROM TAMPERING

ANTI SPOOFING
Advanced liveness detection algorithms seamlessly prevent unauthorized access by using printed or displayed images, video and masks.

CROSS PLATFORMS SW AND COTS HW
BIOID face recognition can run on highspeed GPU, standard CPU and mobile ARM platforms. Choose between Linux, Windows, Android or iOS platforms.

NO RISK OF GETTING LOCKED IN TO EXPENSIVE OR SPECIALIZED HARDWARE AND SOFTWARE

SECURITY AND PRIVACY PROTECTION

All biometric data can be used on Android or iOS platforms and is transferred as encrypted templates that are irreversible.

PROTECT YOUR DATA FROM MISUSE OR TAMPERING

CROSS AGE, GENDER AND ETHNICITY INVARIANCE

Our advanced algorithms can classify faces by age, race and ethniicity.

BIOID-FACE RECOGNIZES YOU BETTER THAN YOU CAN Images from any source (ID photo, selfie, CCTV feeds or social images) and subjects in any position can be recognized, despite angles and turns, facial expressions, glasses, occlusions or gender transformations.

TECHNICAL SPECIFICATIONS

SUPPORTED OS	SUPPORTED HW	SDK LANGUAGES	HW REQUIREMENTS
◪ Linux	◪ COTS Hardware	◪ C++	◪ Minimum GPU requirements: NVDIA GTX 1060, 6 Gb RAM
◪ Windows	◪ Any type of GPU with CUDA support	◪ .net	◪ Recommended GPU: NVDIA GTX 1080Ti or Tesla P40
◪ Android		◪ Java	◪ Recommended CPU: Intel Core i7 (Coffee Lake or SkyLake generation)
◪ iOS	◪ Any type of CPU		
◪ 64bit & 32bit where applicable	◪ Mobile CPU with ARM architecture		◪ Minimum RAM: 6Gb
			◪ Recommended RAM: 16 Gb

ADDITIONAL SPECIFICATIONS

Supports ISO/IEC 19794-5 compliant images (480x680 jpeg color images)

Works with min 20 pixels between the eyes

Template size is 1024 bytes in memory

More than 5 million matches per sec per core

Quality Assessment, gender and age detection

Rank performance; 99.18% Rank 1 recogition accuracy for ID/Visa vs Wild

ABOUT BIOID

BIOID is a Swiss Technology company in the business of design, development and distribution of Identity Management solutions

Corporate Headquarters: Geneva, Switzerland

Software Engineering: India and US

R&D: US and Europe

Regional/Partner Sales offices: USA, Switzerland, India, Indonesia

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LEARN MORE ABOUT US

www.bioidtech.ch