Face Recognition

Product Introduction

Product Documentation

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Product Introduction
Overview

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Overview

Tencent Cloud Face Recognition leverages Tencent YouTu's face recognition and analysis technologies to provide developers and enterprises with a full set of high-performance and high-availability face recognition services such as detection, analysis, search, comparison, verification, feature localization, and liveness detection. It is applicable to scenarios such as smart retail, smart community, online entertainment, smart buildings, and online identity verification, meeting the needs for facial attribute recognition and identity verification across industries.

Features

Face detection and analysis

Face Recognition can analyze a given image to determine whether it contains a face. If yes, it can return information about the position, attributes, and quality of the face. This includes gender, age, expression, charm, glasses, hair, mask, pose, quality ranking, etc. For more information, please see Face Detection and Analysis.

Facial feature localization

Face Recognition can locate facial features on a given image and calculate 90 facial landmarks. This includes eyebrows (8 points on each side), eyes (8 points on each side), nose (13 points), mouth (22 points), face contour (21 points), and eyeballs or pupils (2 points). For more information, please see Facial Feature Localization.

Face comparison

Face Recognition can compare faces in two images and return the similarity score. For more information, please see Face Comparison.

- If you need to check "whether the person is someone" in scenarios such as face log-in, i.e., whether the person in a given image is someone with a known identity, we recommend using Face Verification.

Group management

Face Recognition allows you to create a group to store information about people (such as facial features and IDs) for face verification and face search. For more information, please see Group Management APIs.

Face verification

Face Recognition can check whether a person in an image corresponds to a given `PersonId`. For more information on `PersonId`, please see Group Management APIs. For more information, please see Face Verification.

Unlike the CompareFace API that is used to compare the similarity of two faces, face verification is used to check "whether the person in a given image is the same as the `PersonId`" whose information is stored in a group. This `PersonId` may have multiple face images.

Face search

Face Recognition can recognize the first N people in one or more groups who are similar to the person in a given image and rank the similarity in descending order. Each search supports up to 3 million faces in such groups. The search can be made on one or more faces in the image. For more information, please see Face Search.

Image-based liveness detection

Image-based liveness detection is used to detect the liveness of faces in images uploaded by the user (i.e., whether the person in the image is real). Compared to video-based liveness detection, image-based detection does not require speaking, shaking heads, winking, etc. It is only suitable for scenarios where requirements for attack defense are not high. For more information, please see Image-based Liveness Detection.

Strengths

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Strengths

Accurate recognition

Face Recognition has set many records in international competitions. It achieved an 99.80% accuracy in LFW 2017 and an 83.29% recognition rate in the MegaFace challenge.

Stability and reliability

Face Recognition has been verified by a large number of users and complex use cases. It is proven to be highly reliable and robust with service availability up to 99.9%.

Leading algorithms

Based on the 3rd generation Tencent YouTu Grandmother Model, Face Recognition has integrated multiple training methods to optimize the model, including metric learning, transfer learning, multi-task learning, etc. It can custom fine-tuning or distilling models to meet requirements for performance and latency in different scenarios.

Diverse use cases

Face Recognition provides simple APIs and has diverse use cases such as access control, VIP identification, sign-in, payment and login.

Real-time response

Face Recognition features high concurrence, high throughput, and low latency. It can search and process millions of faces in hundreds of milliseconds, meeting you needs in real time.

Use Cases

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Use Cases

Business

VIP customer management

Face search technology can be used to recognize VIP customers in an image, improving VIP customer services and strengthening relationships.

Traffic monitoring

Face detection technology can be used to count the number of people on screen. It is suitable not only for the retail industry to analyze the effectiveness of product placement, but also schools, workplaces, conferences, etc. to track attendance.

Precise ad placement

Face analysis technology can be used to quickly and accurately analyze people attributes in images, such as age and gender, and facilitate targeted advertising.

Entertainment

Photo classification

Face Recognition uses face recognition and search technologies to group similar faces in an album and organize photos by faces.

Beauty filters

Face Recognition uses the feature localization technology to accurately detect facial features and apply beauty filters, reshape or swap faces, add cartoon effects or stickers, etc.