

# **Optical Character Recognition**

## **Overview**

### **Product Documentation**



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Optical Character Recognition (OCR) provides high-precision text recognition services in multiple scenarios, including:

1. Print recognition for cards, certificates and documents, such as ID cards, road-worthiness certificates, driver's licenses, business licenses, business cards and invoices.
2. Handwriting recognition, such as exam questions and waybills.
3. Optical character recognition with custom templates.

# Benefits

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- **Cutting-edge Algorithms**

Leveraging Tencent's powerful deep learning algorithms and leading OCR technology, OCR achieves an average recognition accuracy rate of over 95% for printed text and over 90% for handwritten text and has an average recognition speed of 2 ms per character for GPU and 6 ms per character for CPU. In addition, its algorithm models are continuously optimized and iterated.

- **Stable Services**

With its high availability and performance proven effective by massive volumes of end users and complicated application scenarios, OCR has been widely adopted by Tencent's core businesses such as WeChat, QQ, Tencent Social Ads and WeBank as well as prestigious customers like Kuaishou, SF Express, SinoTrans and Dianping.com.

- **Ease of Use**

With a simple and intuitive demo and high compatibility, OCR not only has APIs that can be called directly, but also provides a variety of SDKs for developers.

- **Wide Range of Application**

TIXOCR can recognize printed and handwritten text on dozens of types of cards and documents such as ID cards, road-worthiness certificates, driver's licenses, business licenses, business cards and invoices and offers custom templates for text recognition to meet diverse requirements in different scenarios.

# Features

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- **Universal Print Recognition**

TIXOCR can recognize Simplified and Traditional Chinese characters, letters, digits and special characters on printed images with any layout and photos in various scenarios and return their corresponding positions. In addition to Chinese and English, it now supports 18 other languages including Japanese, Korean, Spanish, French, German and Portuguese.

- **Universal Handwriting Recognition**

TIXOCR boasts enhanced recognition capabilities for handwritten text with "irregular, sloppy and fuzzy legibility." It can recognize handwritten Chinese characters, letters, digits and common characters in images with any layout in different scenarios.

- **ID Card Recognition**

TIXOCR supports the recognition of all fields on the front and back of a second-gen Chinese ID card, including name, gender, ethnicity, date of birth, address, citizen ID number, issuing authority and validity period, and features alarming for photocopied and temporary ID cards.

- **Business License Recognition**

TIXOCR supports the recognition of all fields on a business license image, including registration number, legal representative, company name, address, business period, business scope and subject type.

- **Road-worthiness Certificate Recognition**

TIXOCR supports automatic location and recognition of all fields on the pages of a road-worthiness certificate, including license plate number, vehicle type, owner, address, nature of use, brand and model, vehicle identification number, engine number, registration date, date of issuance and issuing authority.

- **Driver's License Recognition**

TIXOCR supports automatic location and recognition of all fields on the primary page of a driver's license, including license number, name, gender, nationality, address, date of birth, date of initial

issuance, permitted vehicle types and validity period.

- **Business Card Recognition**

TIXOCR supports automatic location and recognition of various fields on a business card, including name, phone number, mobile number, email address, company, department, title, website address, business address and QQ, WeChat and MSN account information.

- **Bank Card Recognition**

TIXOCR can automatically recognize the card number and expiration date of mainstream bank cards and return information such as the issuing bank, card type and cardholder's name.

- **License Plate Recognition**

TIXOCR can automatically locate and recognize the fields on a vehicle license plate issued in Mainland China and return the geographical number and license plate number.

- **VIN Recognition**

TICOR can automatically recognize and collect the 17-character VIN with a recognition accuracy of over 99%, mainly applicable for industries such as auto insurance, used car trading and vehicle maintenance.

- **Rapid Calculation Recognition**

TIXOCR can automatically recognize and score rapid calculation questions, currently covering 14 types of questions within the K12 scope with a recognition accuracy of over 91%.

- **VAT Invoice Recognition**

TIXOCR supports the recognition of all fields on a VAT invoice, including price after tax, invoice code, invoice number, total tax amount, total amount, password area, invoicing date, tax rate, purchaser's identification number and seller's identification number.

- **Vehicle Invoice Recognition**

TIXOCR supports the recognition of key fields on a vehicle invoice, including machine number, machine code, invoice number, invoice code, ID number, invoicing date, vehicle identification number, seller's name, purchaser's name, price before tax, tax rate, price after tax (in words), price after tax (in numbers) and VAT amount.

- **Passport Recognition**

TIXOCR can recognize the profile page of a passport issued in mainland China and output structured key fields, including birthplace, date of birth, nationality (in English), gender (in English), passport number, expiration date, issuing country, issuing place (in English), date of issuance, type, given name (in English) and surname (in English).