

AI OCR world's top authority competition 'ICDAR Robust Reading Competition' Upstage swept four categories, showing off global top AI technology.

Upstage (<https://www.upstage.ai/>) announced on the 21st that it has once again proven its global top OCR technology by ranking first in all four categories of 'ICDAR Robust Reading Competition' HierText-1/2, VQAonBD, and IHTR, an international competition started by the International Association for Pattern Recognition (IAPR).

'ICDAR Robust Reading Competition' is the most prestigious international competition in the field of Robust Reading, which is a technology that detects/recognizes text on digital images and videos. ICDAR is an abbreviation for 'International Conference on Document Analysis and Recognition', which is an international conference held every year since 1991, and is an international conference where global companies and researchers and experts working in the field of document analysis and recognition participate.

OCR (Optical Character Recognition) is divided into two main technologies: ?detection technology that finds the location of characters in an image and ?recognition technology that finds out what the character is. Upstage recorded the highest score in the competition with global big tech companies such as Amazon, NVIDIA, Alibaba, and Huawei in both character detection technology and recognition technology.

The IHTR category, in which Upstage received first place on the 20th, dealt with the problem of recognizing letters for 10 representative languages used in India. Upstage used character recognition technology to participate in the competition and showed outstanding performance by building the best performance model even in new languages that had no previous experience.

In particular, in the 'Hierarchical Text Detection and Recognition' category, which performs new tasks of OCR using 'HierText', the first real image dataset that provides hierarchical annotations indicating the structure of words, lines, and paragraphs, the Upstage team and the Hong Kong branch swept first and second place, showing a huge gap in technological power.

In the VQAonBD category, where it is not possible to receive good evaluations with simple OCR technology alone, Upstage also stood out by achieving global top performance with a huge score difference from the second place. VQAonBD is a category that performs tasks of giving a document image and obtaining the answer to the data in the image. For example, it not only extracts accurate answers to questions such as "What is the sum of taxes in 2019?" after giving a complex tax document, but also presents problems that perform arithmetic operations such as finding ratios, averages, minimum and maximum values, etc. using the value.

In particular, the Upstage team that won this time was formed by the Upstage Challenges team, which is the only team in Korea to win double-digit gold medals in the Kaggle competition, and the OCR team. It is evaluated that the best performance was created by combining the capabilities of the Challenges team, which has two grandmasters and one master, including Kim Yoon-soo, an engineer who was named the youngest grandmaster in Korea by ranking first and second in the Kaggle competition in 2021 and 2022, and excellent researchers at Upstage who are actually performing various OCR tasks for various companies in the field.

Upstage said that the reason why it was able to receive excellent results in this competition was that it used a new methodology through fierce research and used a different method from the existing one. The existing detection technology used the word area to be reduced as much as possible to avoid adjacent word areas from overlapping with each other. The Upstage team greatly improved the model performance by predicting the word box by putting a gap between the word areas while only reducing the word area a

little.

Through this, the Upstage team was able to greatly improve the similarity (tightness) between the predicted box and the correct box, which is one of the evaluation criteria newly established from this competition.

AI OCR technology is a technology that is at the forefront of digital transformation among AI technologies, and various companies are speeding up the enhancement of data digitalization. Upstage has developed an OCR pack that utilizes the best OCR technology, and is leading the AI innovation of companies in various industries, including Hanwha Life Insurance, Samsung SDS, and POSCO Group, at the beginning of this year.

Upstage has released a no-code-low-code solution AI Pack that helps customers use AI technologies such as OCR technology, which has reconfirmed its technology in this competition, and recommendation technology that considers customer information and product and service features, and an API series that can conveniently utilize it by copying the code. By using Upstage AI Pack, you can easily utilize data processing, AI modeling, and metric management, and provide continuous updates to support the latest AI technology at all times.

Upstage CEO Kim Sung-hoon said, "I am very happy that Upstage has been recognized for its global top AI technology again by sweeping first place in four categories of the 'ICDAR Robust Reading Competition', the world's top authority competition in the field of AI OCR." He added, "We will help the digital transformation and AI global innovation of the entire industry that needs document automation with Upstage's AI OCR, which has been verified as the world's best technology."

Meanwhile, Upstage is operating 'AskUp Biz', a business version of 'AskUp', the best Chat AI in Korea,

with AI Pack as a service for companies, in addition to the API series and AI Pack. AskUp Biz is a service that optimizes business environments to increase the efficiency and satisfaction of companies' work, and consists of three parts: AskUp Doc, which can read various documents and obtain information with Chat AI, AskUp Web, which can provide information to website visitors with website information, and AskUp Slack, which can be used in Slack, a work tool. It has received hot attention, with hundreds of companies applying for it after its release.