# We build the future through **Data-centric AI.** We inspire **AI & Human Collaboration. We are Crowdworks.**

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### Intelligent Al Training Data Platform

Crowdworks delivers high-quality AI training data to diverse clients in the most efficient manner. Since its establishment in 2017, Crowdworks has achieved an explosive growth of 1,000% and operates the largest pool of crowdworkers in South Korea.



### Crowdworks leads the Al innovation with high-quality training data

### 2017~18

2017.04 Established Crowdworks Inc.

2017.06 Raised seed investment from Bigbang Angels

2017.07 Selected as Startup program in Innopolis **Raised seed Investment from Naver** 

2018.03 Raised seed investment from Infobank

2018.07 Selected as a TIPS technology startup project

2018.08 Raised Series-A round funds

2018.12 Awarded CCEI best-case award

#### 2019

2019.03 Established Crowdworks Japan Inc.

2019.05 Selected for First Penguin program at KODIT

2019.09 Raised Series-B round funds

2019.11 Selected as the Final winner of Korea-UK Tech **Rocketship Awards** Awarded the SME Best Growth Award

#### 2020

2020.01 Selected for demo at Singapore

2020.05 Selected for the ICT Future Unicorn Startup Project

2020.06 Certified with Good Software(GS) Certification

Named as National Innovation Company Top 1000

#### 2020.12

2020.11

Awarded Venture and SME Revitalization Merit award Awarded from the Korean Intellectual Property Office Selected as a member of the Information and **Communication Strategy Committee** (Prime Minister Appointed)

### 2021

2021.01 Selected as 'Korea's Top 10 Startup' by NIA

2021.03 Registered 100th patent

2021.04

2021.07 Selected as an excellent case in the field of digital new deal innovative company by the Ministry of Science and ICT

2021.11 Raised Pre-IPO funds

#### 2021.12

Received the Grand Prize at the Data Quality Grand Prize by the Ministry of Science and ICT (Korea Data Industry Promotion Agency President's Award) Selected as 'The 6th Innovation Icon Company' by Korea Credit Guarantee Fund

Awarded 'Excellent Case of Digital New Deal of the Year' by the Ministry of Science and ICT (Ministry of Science and ICT)

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### 2022

2022.03

Received Industrial Service Medal from the President

Registered its first US patent 'Image Sampling Technology for AI training

2022.04

Signed MOU with Kakao Enterprise

2022.06

Selected in Epicenter Stockholm Accelerator Program

#### 2022.07

Named as a Sample Vendor in the 2022 Gartner Hype Cycle for Data Science and Machine Learning 2022 & Hype Cycle for Artificial Intelligence 2022

2022.10 Selected as Korea Al Startup 100 of 2022

### Largest Patent Holder in South Korea

in Al Data Labeling in Worker and Data Management

134 registered patents 49 applied patents (22 PCT) \*As of Sep. 22











### Trusted by 430+ Leading Companies



### Testimonials

#### - Systematic operation process in data collection

"I have collaborated with about 4 data collection companies including Crowdworks. Crowdworks has the most systematic process from developing guideline, data collection to data delivery compared to others. Crowdworks' rich experience enables seamless management of varioud AI data collection project from the start to finish."

#### - The Quality and the Quantity of collected data

This is the biggest strength of Crowdworks. Data collection with QA is possible elsewhere but Crowdworks' final quality of the data outperforms that of others. Crowdworks provides high quality data while maintaining the standards we agreed upon at the beginning of the process.

- IT company

"...Crowdworks' platform not only provides millions of data, but also supports entire labor-intensive tasks, serving as a catalyst for the advancement of Naver's AI technology. For the past three years, Crowdworks has collected and annotated data in 12 languages for the Papago translation service, and also inspected the copyright infringement of user-created items in ZEPETO. Mr. Yang said "Without Crowdworks, it would take a tremendous amount of time to build the foundation of Naver AI or would not have reached the level it is today." and "It is not an exaggeration to say that Crowdworks made the performance of today's Clova or Papago"...

- Leader of D2SF (Naver Startup VC) Jang- Sang-Whan

### **Crowdworks Service Portfolio**



### Crowdworks™

High quality AI training data collection/annotation service for

computer vision and NLP



Big data- and AI-driven technologies are applied at every step for the fastest delivery of high-quality data.

### **Crowdworks™ Process**

A dedicated project manager closely oversees the entire data project.



Based on the largest number of use cases in South Korea, Crowdworks provides tailored data production services regardless of project duration.

From project design to worker performance management, Crowdworks leverages its integrated platform —enabling smooth operation of any AI data project.

#### Project operation/ management

Perform real-time monitoring and trouble shooting using dashboard /

#### Data delivery

### **Interactive Data Annotation**

Al-human collaboration: When the worker specifies a specific scope, and the Al model automatically completes the data labeling within the specified scope, which speed up your work by up to 13.8x.



### Smart Labeling

Smart Labeling enables AI-powered auto labeling. The worker validates the pre-labeled data and corrects some objects to complete the data annotation.

#### Application area :

- 80+ Auto object detection
- 100+ Auto language recognition and OCR
- Whole body key points after analyzing human posture

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480+ face keypoints



### **AI-assisted Quality Check**

Our AI evaluates labeling accuracy, save inspection time by

up to 17%



save inspection time by upto 17

#### Key features :

- Auto rejection : When the worker submits the work, AI model immediately check for obvious errors. In case of obvious error, Rework request pops up automatically.
- Inspection support : AI model provides additional information for better inspection to the inspector in order to reduce false inspection and to secure consistent rejection standards.

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### Crowdworks<sup>™</sup> Annotation Tool

Crowdworks support the largest annotation functions

in Korea to address diverse customer requirements.

#### Crowdworks operates 40+ annotation tools of accumulated expertise from 1,000+ project operation.



Find out more Annotation Tool



Polygon



Video Extraction

### Crowdworks<sup>™</sup> Use Cases Natural Language Processing(NLP)

Through crowdworkers trained on our AI data platform, we provide various NLP data from general task(correction, translation) to specific task(classification of emotion, intention, expert knowledge. The annotated NLP data is used for accelerating AI Search Engine, AI chatbots or TTS(Text-to-Speech) service.

Crowdworks Times	
Growth in demand for AI data and development of the market Classify the content of the article above.	<b>X</b>
Politics ✓ Tech Sports   Arts Health	

#### **Emotion and** intention analysis

Analyzes the emotions and intentions contained within the text and classifies them into specific categories.

Delivery Platform Review Tagging / Daily Conversation Tagging Chatbot Conversation Evaluation / Sentence Evaluation

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#### **Document analysis**

Trains expert documents(Legal/ Medical/ Manufacturing) and classifies document type and analyzes documents through summary, unit separation, and morphological analysis.

Legal Document Tagging / Official Document Tagging / Thesis Tagging

#### **Translation**

Provides multi-language translation service regardless of industry

Conversation translation

Crowdworks provides valuable and useful training data to empower clients' Al models and business operations through crowdsourcing. Under full management of vorkers, our pool of dedicated members and technical experts offer high quality data labeling, collection and even HR management services on a artner's demand—covering all industry

#### Correction

Finds sentences that are not grammatically or contextually appropriate in the text and corrects them into appropriate sentences.

English grammar tagging

# **Crowdworks™ Use Cases COMPUTER VISION & IMAGE ANALYTICS**

We annotate image data through trained crowdworkers on our intelligent AI data platform.

These data are used to accelerate AI in computer vision and image analytics fields such as object recognition, motion recognition, and OCR.



#### **Object recognition**

Reinforces object recognition on certain objects through multi-learning with specific data

> Body image data annotation / Furniture image data annotation

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#### Face/Motion recognition

Recognize changes in object movement through annotating specific points in the image.

> Body/finger key points annotation / movement key point annotation



#### **Character extraction**

Locates text and character in images and extracts text for editing and reprocessing.

Multilingual OCR

## Crowdworks<sup>™</sup> Use Cases COMPUTER VISION & CLASSIFICATION

We annotate image data through trained crowdworkers on our intelligent AI data platform.

These data are used to accelerate AI in computer vision and image analytics fields such as object recognition, motion recognition, and OCR.



#### Autonomous driving

Detects objects (Lanes, road markers, and traffic lights) based on driving images and classifies them according to specified classes and categories.

Driving image semantic segmentation Driving image cuboid bounding

#### Security control •Unmanned stores

Tracks the movement of a person and detects the scene after acquiring the skeleton motion from the video.

CCTV video analysis / ID tracking



#### Augmented Reality(AR)

By recognizing and classifying various objects appearing in a scene, it enables an overlay of the object's 3D space and the real environment around it.

Furniture Classification Instance Segmentation





AI training data annotation platform

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Workstage™ On-Premise	Workstage™ SaaS		andre in sid
Offline installation : Recommended for maximum security	Online access : Data annotation platform priced by hours of use		
		☆:	

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### **No-Code Annotation Work Screen Customization**

Customer can easily create and customize a work screen

by an easy drag-and-drop.

Customer can quickly create data labeling work screen within a few clicks. Optimized templates per data type are provided for easy set up.



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special characters are not allowed.				
3				
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Drag and drop a field from the left s				

### **Real Time Monitoring**

The dashboard allows you to track progress and predict issues in real-time.





Administrator can easily check the overall project progress rate, real-time work and inspection progress, and graphs of changes in the last 7 days through the real-time dashboard.

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Crowdworks

## **Work Group Operation**

Multiple work group of workers and inspectors can be created and managed

upon your criteria.



### "Workstage™" is essential for...



"we don't want to risk data leakages"

"Our solution can be deployed on the premise of the client so no data leaves the company."

"We have our own labelers, but we need a labeling tools and platform" "We provide an integrated AI data production solution, which includes project and team management features."

"Because of company- wide security regulations, we can only work in an environment where our security program is applied"

"We provide On-premise service which meets your security regulations."

### Crowdjobs™

Optimal labeler matching based on big data



We select the most appropriate data labeler for clients within our pool of 500K+ crowdworkers, which is the largest in Korea

User1 has been detected as Abuser. User1 is restricted from the project.

Project Name: Voice Dictation Details: Link

## Multiple index for labeler qualification

We analyzed various indicators that can objectively qualify labeler competency : Labeler training completion history and work participation history.

We are continuously analyzing worker profiles and behavioral data to match the workforce that best meets customer requirements.

Different from the existing recruitment methods (Recruitment notice-> reviewing resumes-> interviewing), we provide a data labeler recruitment service based on data and algorithms, so you can quickly secure labelers with the desired conditions.





### "Crowdjobs™" is essential for...

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"I want to annotate data within the company due to security issue but we have no labeler" "With CrowdJobs, we dispatch the most suitable people out of 400,000 data labelers for as long as you need them"

*"It is difficult to find applicants who meet the qualifications necessary for the job"* 

"Through the matching function based on profile and task history data, we can quickly provide applicants who meet the requirements."



"I would like to be able to check the labeling performance of applicants before hiring." "We are continuously monitoring the performance of our workers, and we select candidates with proven competency."

### **MLworks Solution**

AI model-driven AI data preprocessing service

Leveraging the data and know-how acquired via successfully delivering over 100M+ AI data, we provide rapid data annotation services using AI-driven models.

Available model

Auto Keyframe extraction

Available model

AI data de-identification



### Auto Key frame extraction

To maximize the AI model training effect, only the frames containing the most effective training information are extracted from the video.

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Key frame extraction			11
Number of keyframes " Nease set the number of key frames you want to extract for each uploaded video. (at least 10 cases)			1
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By building the training data as a key frame through the model, the time and cost of acquiring data and training the model are reduced, while achieving the same learning effect and inference performance.

















## AI data de-identification

Automatically detects and cuts out the personal information area on the source data, automatically blurs / mosaics it, and then overlaps the source data again to de-identify it.

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### **MLworks Model**

The Fastest Solution for Enterprise-Customized Large Language Model (LLM) Adoption





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sted. I was trained or	n a large corpus of data that includes text written up unti	2021	6			
Is it open to public?						
mers, etc.	Yes, models like ChatGPT are generally open to the p	ublic.	5			
swers could be nothing but a hallucination) France gift Lithuania Vilnius TV tower?						
	France gifted Lithuania the Vilnius TV tower in	1980.	6			
<b>1</b>	ChatGPT		<b></b>			

# Model 1 Using ChatGPT interface

Automate CS tasks (personalized call to customers) via ChatGPT

utilizing data processed from your internal systems.



- Direct-sourcing of Models / Tuning

- Sourcing of partnered model / Tuning

- Available as an API

# Model 2 Using Fine-Tuned GPT

Build LLMs trained on internal data in an internal environment,

ensuring security and streamlining the work of employees.



- Direct-sourcing of Models / Tuning

- Sourcing of partnered model / Tuning

### **Internal System**

### Qualityworks

Fast and accurate Quality Assurance through ground-truth data

built by the largest worker pool in Korea



We provide Ground-Truth-based performance verification service for successful AI models. We guarantee accurate Quality Assurance based on our experience of establishing quality standards and quality verification of all public data for AIHub (public projects.)

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#### Delivery of test result report



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