Konan Technology

AI can make the world a better place

Product Brochure
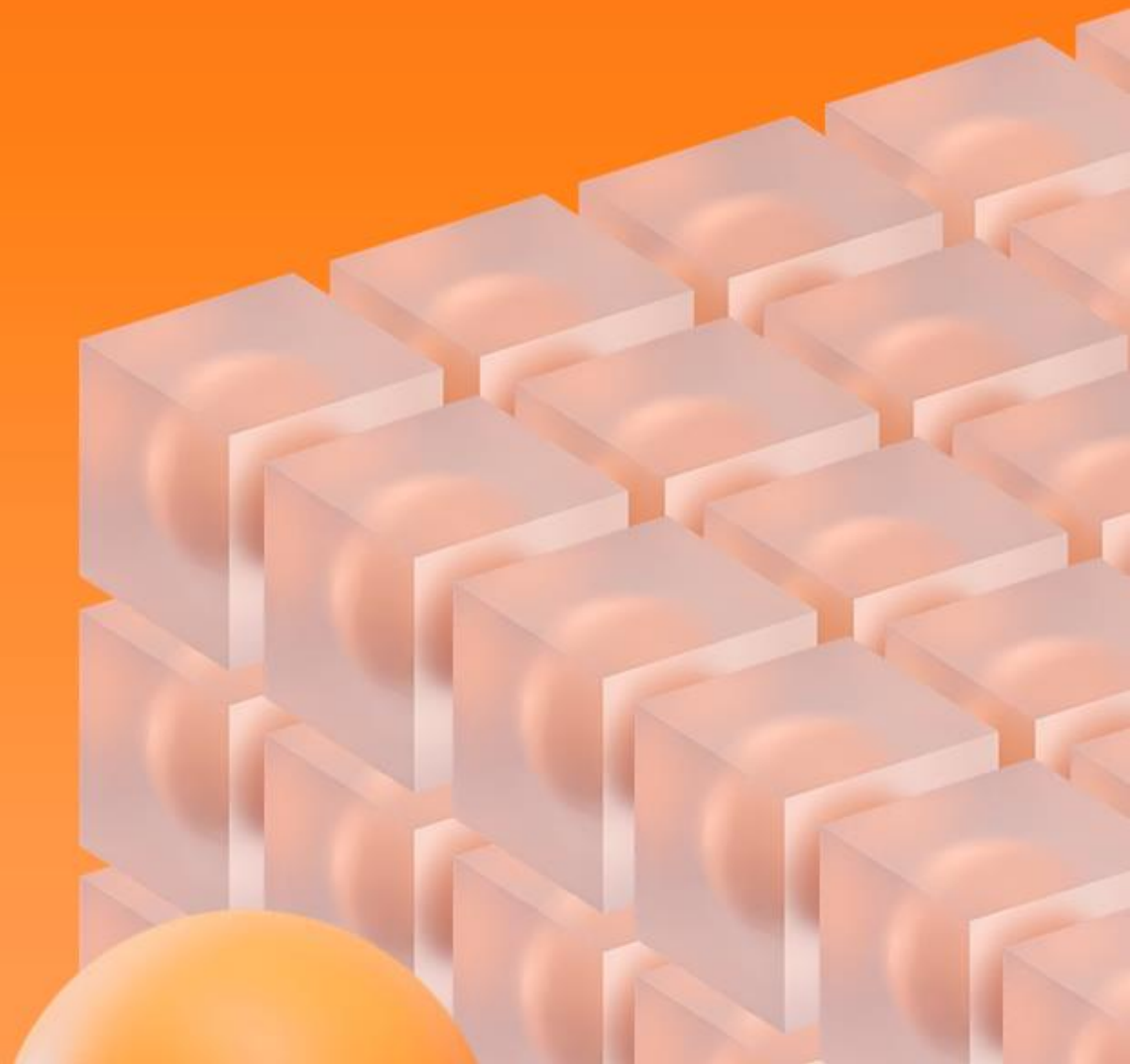
KONAN
TECHNOLOGY

CONTENTS

01

Company Profile

Konan Technology

Konan Technology is a company specializing in Artificial Intelligence software.

Since its establishment in 1999,

we have built up the original technology for over 25 years by focusing on unstructured big data analysis and AI technology.

Please watch Konan Technology drive AI business growth through "AI that sees, hears, understands and speaks like a human."
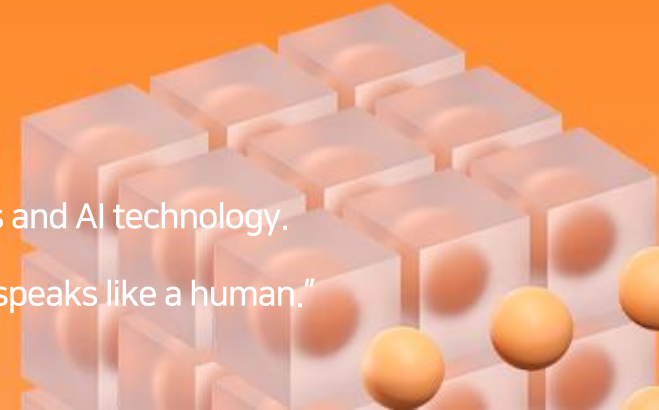
Company Name	Konan Technology Inc.
CEO	Kim Young-Sum
Date of establishment	1999. 04
Key Technologies	Text AI, Video AI, Digital Twin
Main Business	LLM, AI Search/Analytics/Chatbot, AI Watcher/Listener, Voice, PHM, AI Pilot
Number of Employee	239 (as of 2024. 8. 7)
Address	327, Gangnam-daero, Seocho-gu, Seoul, Daeryung Seocho Tower 6,7,9 FL
Corporate Type	KOSDAQ-Listed Company

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Clients

Leveraging 25 years of customer trust and cutting-edge technology, We has successfully onboarded 2,500 clients spanning various industries, including major corporations such as Hyundai, Samsung, government agencies, and financial institutions.

2,500 + Clients   **3,000** + Projects

Category	Logos
Conglomerate	HYUNDAI, SAMSUNG, SK, 현대중공업, LG전자, KIA, olleh kt, HYOSUNG, SHINSEGAE, 두산건설, CJ 헬로비전, DOOSAN, 한일현대시멘트, AMORE PACIFIC, SPC, HANSSEM, 모두투어, E-LAND MALL, DAEKYO 대교, KPSA 한국프로스포츠협회, 한국전력공사, KAI
Government Services	기획재정부, 산업통상자원부, 인사혁신처, 행정자치부, 특허청, 외교부, 조달청, 미래창조과학부, 문화체육관광부, 국토교통부, 국세청, 여성가족부, 통일부, KTV 국민방송, 대한민국 국방부, 경기도일자리재단, 국제지식재산연수원, NIA 한국정보화진흥원, KDI 한국개발연구원, TS 한국교통안전공단, LH 한국토지주택공사, 부산광역시, 서울특별시
Retail	롯데홈쇼핑, 11번가, Shopping, 현대홈쇼핑, AMORE PACIFIC, CLIO PROFESSIONAL, GS SHOP, millie 밀리의 서재, 오늘의집, 롯데백화점, FILA, HANSSEM, 인터파크 비즈마켓
Financials	IBK기업은행, 현대증권, KB국민은행, KB금융지주, KB국민카드, 우리투자증권, 우리은행, 하나카드, 신한카드, 신한은행, BCcard, LOTTE CARD, 현대해상, 수호천사동양생명, KRX 한국거래소, 수협중앙회, DAOL 다올투자증권, 전북은행, MG새마을금고중앙회, 한국수출입은행
Communication Services	KBS, SBS, MBC, YTN, EBS, JOINS, 매일경제, 스포츠서울, Mnet, MT 머니투데이, 한국경제, 파이낸셜뉴스, 국회방송
Consumer Services	서울대학교, 연세대학교 YONSEI UNIVERSITY, 고려대학교 KOREA UNIVERSITY, 이화여자대학교 EWHA WOMANS UNIVERSITY, KAIST, 경희대학교, 숙명여자대학교, 성균관대학교, DCU 대구가톨릭대학교, 한국방송통신대학교, 단국대학교 DANKOOK UNIVERSITY, 세종사이버대학교

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Shareholders

CEO and major shareholder, Young-Sum Kim, and related parties hold 39.02%.
Strategic investor SK Telecom holds 20.66%, and Korea Aerospace Industries holds 7.78%.
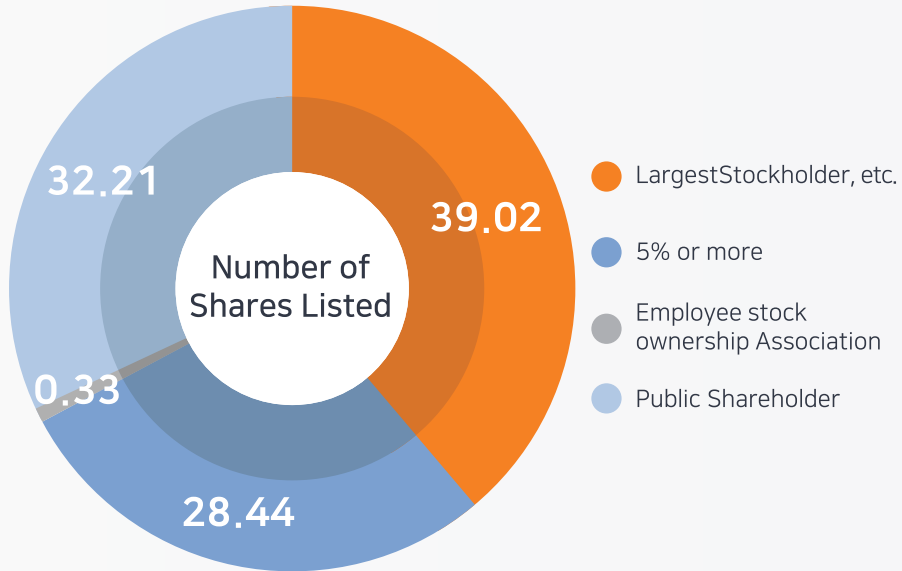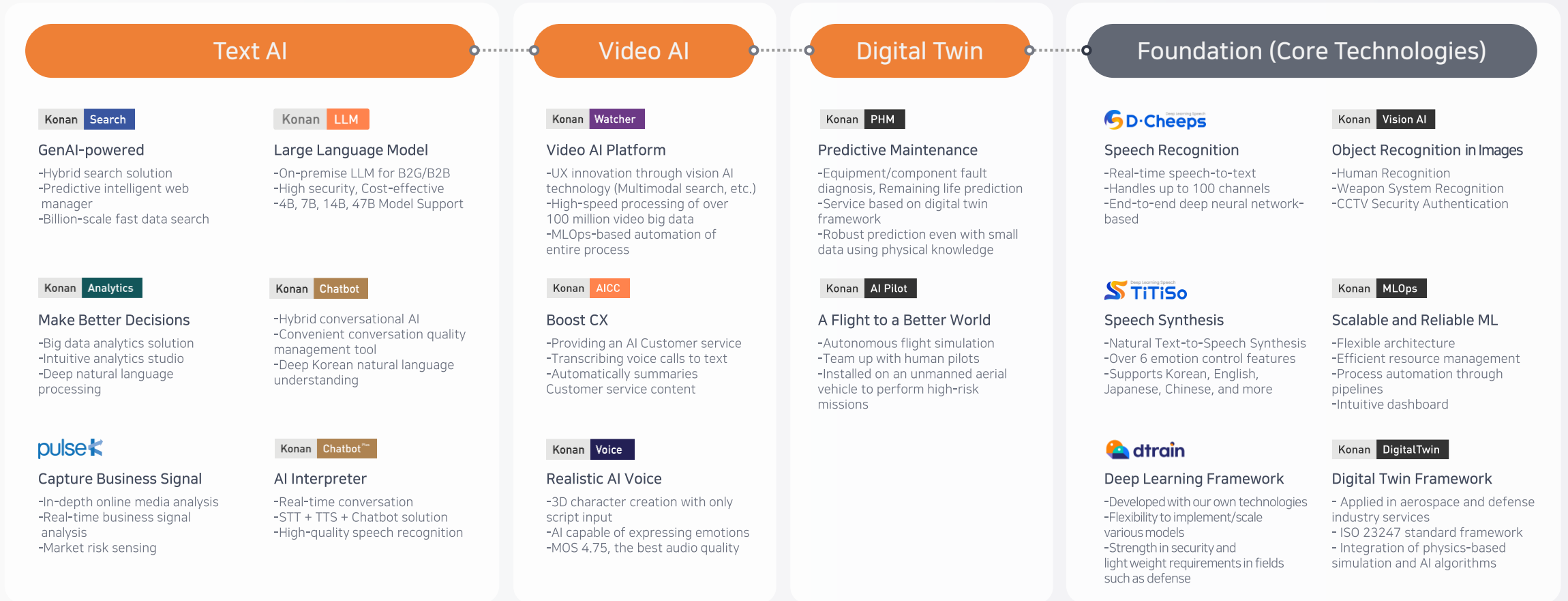
Stockholder's List (as of 2023.12.31)

Number of Shares Listed

- 39.02
- 32.21
- 28.44
- 0.33

Legend:
- Largest Stockholder, etc.
- 5% or more
- Employee stock ownership Association
- Public Shareholder

Shareholder Name		Number of Shares(stock)	Proportion(%)
Largest Stockholder, etc.		4,456,640	39.02
5% or more	SK telecom	2,359,160	20.66
	KAI KOREA AEROSPACE INDUSTRIES, LTD.	888,888	7.78
Employee stock ownership Association		37,660	0.33
Public Shareholder		3,679,340	32.21
Total		11,421,688	100

KONAN TECHNOLOGY

Product Lineup

Based on in-house developed core technology,

We provide various solutions in the fields of text AI, video AI, and digital twin technology.

Text AI

Konan Search

GenAI-powered
- Hybrid search solution
- Predictive intelligent web manager
- Billion-scale fast data search

Konan LLM

Large Language Model
- On-premise LLM for B2G/B2B
- High security, Cost-effective
- 4B, 7B, 14B, 47B Model Support

Konan Analytics

Make Better Decisions
- Big data analytics solution
- Intuitive analytics studio
- Deep natural language processing

Konan Chatbot

- Hybrid conversational AI
- Convenient conversation quality management tool
- Deep Korean natural language understanding

pulseK

Capture Business Signal
- In-depth online media analysis
- Real-time business signal analysis
- Market risk sensing

Konan Chatbot⁺ˡᵘˢ

AI Interpreter
- Real-time conversation
- STT + TTS + Chatbot solution
- High-quality speech recognition

Video AI

Konan Watcher

Video AI Platform
- UX innovation through vision AI technology (Multimodal search, etc.)
- High-speed processing of over 100 million video big data
- MLOps-based automation of entire process

Konan AICC

Boost CX
- Providing an AI Customer service
- Transcribing voice calls to text
- Automatically summaries Customer service content

Konan Voice

Realistic AI Voice
- 3D character creation with only script input
- AI capable of expressing emotions
- MOS 4.75, the best audio quality

Digital Twin

Konan PHM

Predictive Maintenance
- Equipment/component fault diagnosis, Remaining life prediction
- Service based on digital twin framework
- Robust prediction even with small data using physical knowledge

Konan AI Pilot

A Flight to a Better World
- Autonomous flight simulation
- Team up with human pilots
- Installed on an unmanned aerial vehicle to perform high-risk missions

Foundation (Core Technologies)

D·Cheeps Deep Learning Speech

Speech Recognition
- Real-time speech-to-text
- Handles up to 100 channels
- End-to-end deep neural network-based

Konan Vision AI

Object Recognition in Images
- Human Recognition
- Weapon System Recognition
- CCTV Security Authentication

TiTiSo Deep Learning Speech

Speech Synthesis
- Natural Text-to-Speech Synthesis
- Over 6 emotion control features
- Supports Korean, English, Japanese, Chinese, and more

Konan MLOps

Scalable and Reliable ML
- Flexible architecture
- Efficient resource management
- Process automation through pipelines
- Intuitive dashboard

dtrain

Deep Learning Framework
- Developed with our own technologies
- Flexibility to implement/scale various models
- Strength in security and light weight requirements in fields such as defense

Konan DigitalTwin

Digital Twin Framework
- Applied in aerospace and defense industry services
- ISO 23247 standard framework
- Integration of physics-based simulation and AI algorithms

KONAN TECHNOLOGY

02

Text AI

1) Innovation Accelerator, **Konan LLM**

2) GenAI-powered, **Konan Search**

3) Boost CX, **Konan Chatbot**

4) AI Translator, **Konan Chatbot +**

5) Detect Business Signal, **PulseK**

Innovation Accelerator, Konan LLM

Konan LLM is a generative AI model offering top-tier Korean document generation capabilities.
We supply a lineup of diverse sLLMs built on our proprietary AI technology, training data, and development environment.

On-
Premise AI

Konan LLM

On-
Device AI

AI-X
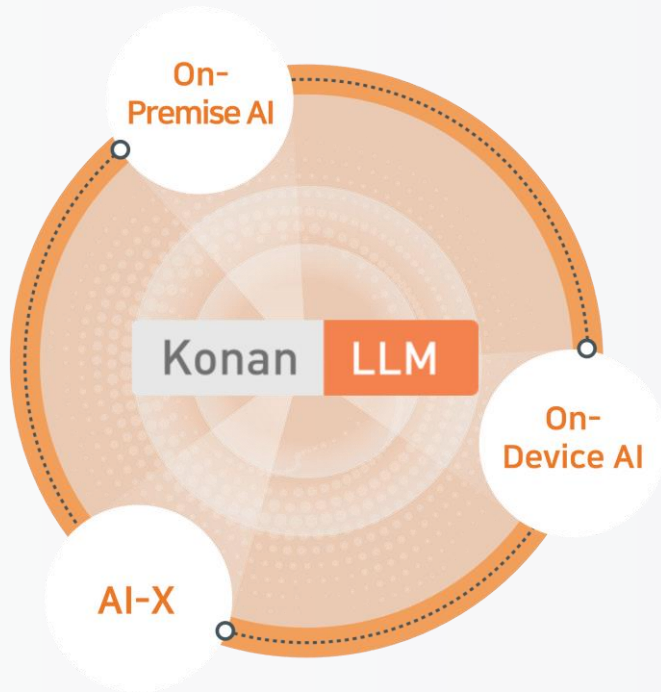
Feature

- Highest amount of Korean training data (5,111 billion tokens)
- Offer a variety of models, from enterprise to on-device, all powered by H100 development servers. allowing you to choose a model that best suits your needs and budget.
- RAG support via vector search engine
- Provides a no-code management tool, "Konan LLM Studio"
- Applying 25 years of accumulated, top-tier language processing technology

Technology

- Domain-adaptive pretraining(DAPT)
- Modular RAG
- LLMOps

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Use Case of Konan LLM

Client   **Korea Southern Power Co., Ltd.**

Details
- First public institution in Korea to adopt LLM
- Generative AI used for report writing, summarization, translation, analysis, coding, and Q&A
- Knowledge collection and learning in common public sector and development areas
- Provides management functions for training, deploying, and operating generative AI models

Benefits
- By building it in-house, the risk of information leakage is eliminated, allowing generative AI to be safely applied to internal tasks.
- Automates repetitive and time-consuming tasks like report writing, summarization, and translation, reducing employee workload and boosting productivity
- Enhances collaboration across the organization and enables informed decision-making processes
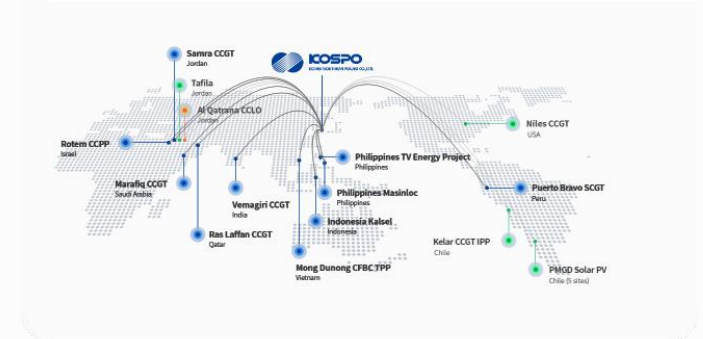
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GenAI-powered, Konan Search

Konan Search delivers more relevant results by semantic search, supports multi-modal search, and enables RAG for Konan LLM through a combination of traditional NLP-based search and vector search.

Neural search-based semantic search
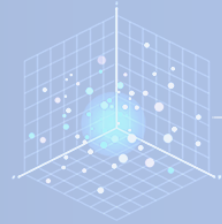
- RAG support in LLM with vector search
- Vector search enables synonym search without a synonym dictionary
- Image vector search enables similar image search without image captioning

Hybrid Search System

- Increase search accuracy with a hybrid approach that analyzes data with rule-based NLP technology first and then further analyzes data with deep NLP technology

Multimodal AI Search

- Multimodal learning overcomes unimodal search limitations by understanding diverse data like text and images, improving search accuracy.

Auto summary

- Enable intelligent analytics, including auto-summarization of long texts using deep learning and machine learning models.

Key Technologies

Big Data Storage/Search Technology
Supports transactions, multithreading, and horizontal scaling for large-scale parallel processing and search..

Hybrid Search Technology
Technology that supports hybrid search combining disk-based large-scale vector search and NLP search.

Domain Language Technology
Provides the largest number of pre-built NLP system dictionaries in Korea, along with user-defined dictionaries, to ensure accurate indexing and search.

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Use Case of Konan Search

Client

Portal for Government information disclosure Of Ministry of the Interior and Safety

Ministry of the Interior and Safety

Details

- Provides uninterrupted public search services
- Reduced server count by one-third compared to the previous S company's search engine, optimizing costs
- Offers Index Tool for easy operation by non-developer

Benefits

Category	Before Replacement (S Company)	After Replacement (Konan Technology)
Search Time for Entire Data Period	∞ (Not Searchable)	1~5 Seconds
Searchable Data Period	3 Month (Partial Period)	13 Years (Entire Period)
Maximum Searchable Data Volume	0.52 Billion Records	17 Billion Records
Service Stability	System downtime for daily maintenance	Continuous stable operation without downtime
Number of Servers	9	8

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Boost CX, Konan Chatbot

Konan Chatbot is a state-of-the-art conversational AI that deeply understands Korean natural language. By integrating with our advanced language model, Konan LLM, Konan Chatbot can precisely identify the intent behind your questions.
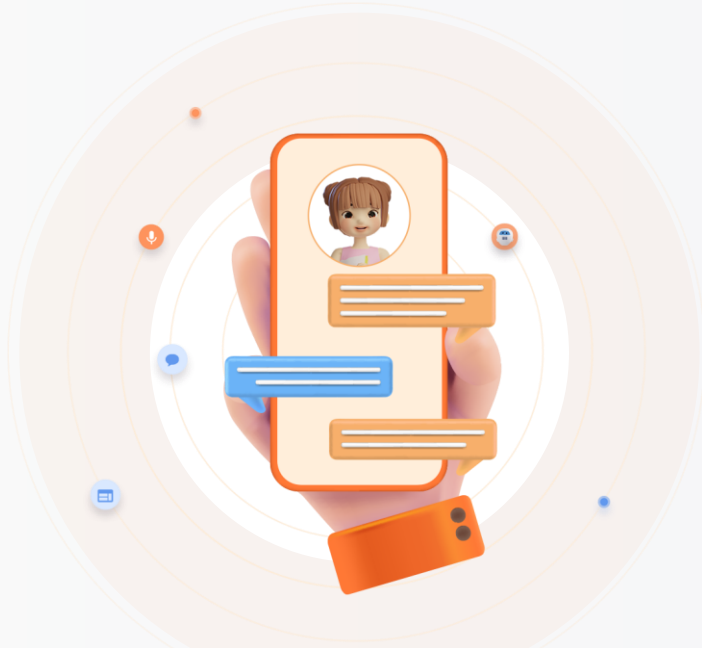
Konan Chatbot

Conversational Natural Language Understanding

Feature

- Hybrid conversational intent inference:
  -Ensures high response accuracy through multi-layer intent inference using deep learning and natural language analysis.
  -Provides optimal answers to off-script queries by integrating with Konan LLM.
- Reduction in conversation data construction costs
  By using Document AI technology, conversation data is automatically generated from unstructured documents such as manuals and rulebooks, reducing both time and costs.
- Easy and intuitive development tools
  Easily integrate with legacy systems with minimal coding using the "Conversation Scenario Editor."

Technology

- Natural Language Processing (NLP)
- Natural Language Understanding (NLU)
- Document AI

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Use Case of Konan Chatbot

Client	**National Tax Service**	

Details
- Public chatbot service by National Tax Service's HomeTax
- Offers consultations on taxes and reporting (e.g., year-end settlement, income tax, VAT)
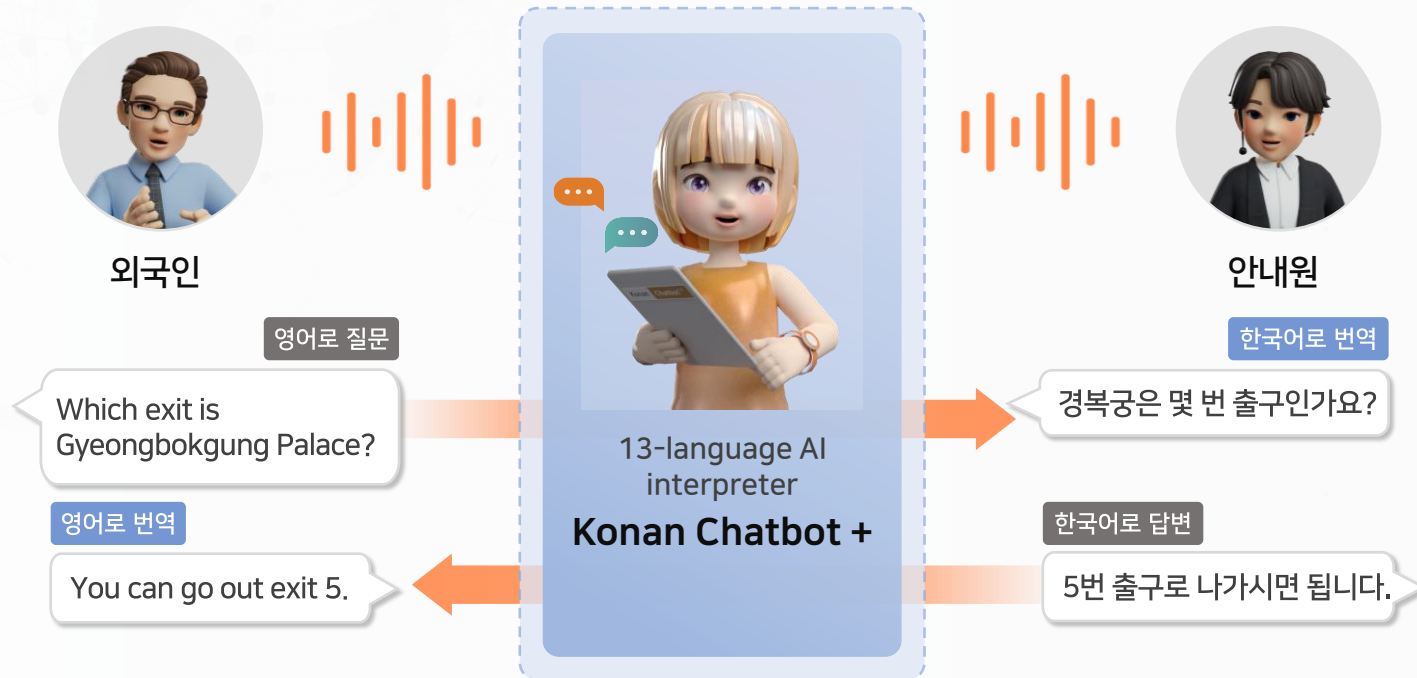- Includes 2.76 million intents with entities, synonyms, and patterns

Benefits
- 1.87 million chatbot consultations on HomeTax in 2023
- 24/7, year-round service
- Generative AI to be introduced in 2024 for tax law consultations
  (Source: National Tax Service, January 2024)

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AI Translator, Konan Chatbot +

Konan Chatbot+ is an AI-based translation service that allows real-time conversations in various languages.
It provides more natural communication with foreigners in their native language through high-quality speech recognition and machine translation technology.

외국인

영어로 질문

Which exit is
Gyeongbokgung Palace?

영어로 번역

You can go out exit 5.

13-language AI
interpreter
Konan Chatbot +

한국어로 번역

경복궁은 몇 번 출구인가요?

한국어로 답변

5번 출구로 나가시면 됩니다.

안내원

Feature

- Real-time translation with the nation's top multilingual recognition and translation engines.
- A convenient User experience combining a transparent touch screen and voice commands.
- We offer fine-tuning to enhance the recognition of domain-specific terms and abbreviations.

Technology

- End-to-End Contextual Automatic Speech Recognition
- End-to-End Neural Machine Translation
- Neural Speech End-Point Detection

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Use Case of Konan Chatbot +

Client	Seoul Metro

Details
- Enables real-time, two-way communication between foreigners and station staff.
- Supports 13 languages, including English, Chinese, Japanese, Indonesian, and Vietnamese.
- Handles various queries, from directions to emergency responses and tourism information.
- Improves translation speed and accuracy with STT and proprietary AI technology.

Benefits
- Increases both staff job satisfaction and foreign tourists' service satisfaction.

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Detect Business Signal, pulseK

PulseK is a real-time online media analysis service that deeply analyzes current online issues using AI-based data science to uncover business signals

pulse K

Online media analysis service based on real-time collection and analysis

	Feature	Technology
Data Collection/Processing	• Real-time collection for big data analytics • Reliable processing of data over 10 million/ 1D	• Distributed/high-speed web crawling
Analysis Services	• Real-time monitoring, insight analysis • The only analysis environment that supports both strong and weak signal analysis • Sentiment and emotion analysis using Machine Learning/Deep Learning.	• Real-time analysis technology • High-volume data processing technology • Advanced NLP technology
Big Data Consulting	• Provide consulting in various areas such as monitoring, crisis management, and Biz Trend analysis	• Co-occurrence and co-relation analysis • Clustering/classification using ML/DL technology • Time series analysis and predictive analysis

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Use Case of PulseK

Client   **Korea Exchange**   KRX 한국거래소 KOREA EXCHANGE

Details
- Cyber monitoring system implementation case.
- Big data analysis for detecting unusual transactions.
- Collection from stock portals (+comments), securities forums, news articles, Blind, YouTube videos (+comments).
- Identification of key posts, anomaly detection, sentiment analysis, and time series analysis.
- By extracting URLs from Fraudulent Stock Signal Chat Rooms*, suspicious activities are detected and identified.
- Provision of collection, analysis, and STT solutions.

Benefits
- Establishment of an early detection system for Stock market monitoring.
- Expanded monitoring depth through the addition of YouTube content analysis.
- Increased operational efficiency by automating the identification of key posts.
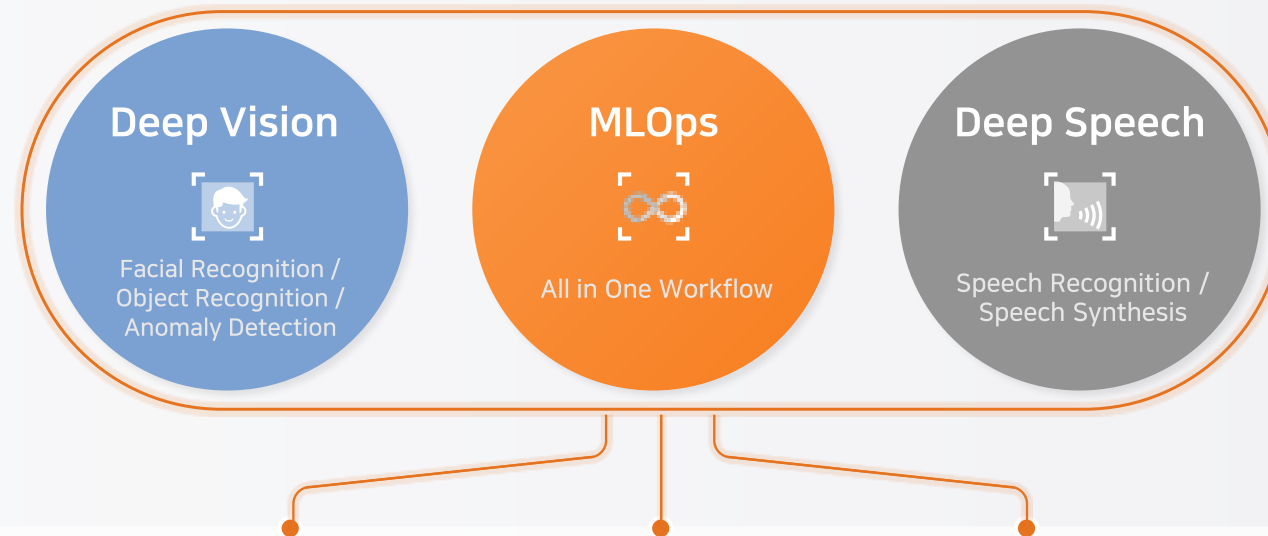
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03

Video AI

1) Video AI Platform, **Konan Watcher**

2) Boost CX, **Konan AICC**

Video AI Platform, Konan Watcher

Konan Watcher is an AI Platform specialized in video processing. It enables the development of various AI applications in defense, safety, and broadcasting by supporting object recognition and anomaly detection within video content.

Deep Vision

Facial Recognition /
Object Recognition /
Anomaly Detection

MLOps

All in One Workflow

Deep Speech

Speech Recognition /
Speech Synthesis

Feature

- Applied data augmentation and correction techniques to secure training data.
- Extraction and generation of various deep metadata within digital content.
- Automatic subtitle generation for real-time video, combined with high-quality TTS technology at a professional voice actor level.
- An all-in-one workflow for video collection, analysis, processing, tagging, and training.

Technology

- SOTA object detection technologies such as YOLO, Co-DETR, and RT-DETR.
- Flexible Adaptive Object Tracking technology that handles frame drops effectively.
- Speaker-adaptive end-to-end speech recognition and multi-speaker speech synthesis technology.
- Automating model execution, training, evaluation, and deployment via a machine learning pipeline.

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Use Case of Konan Watcher

Client — **Ministry of National Defense**

대한민국 국방부
Ministry of National Defense

Combat vehicles Operation System — Recommen-dation Model — Unified AI Platform / 영상/비행 데이터 실시간 처리 — AI 분석 / AI Model — Detect · 식별 · analysis
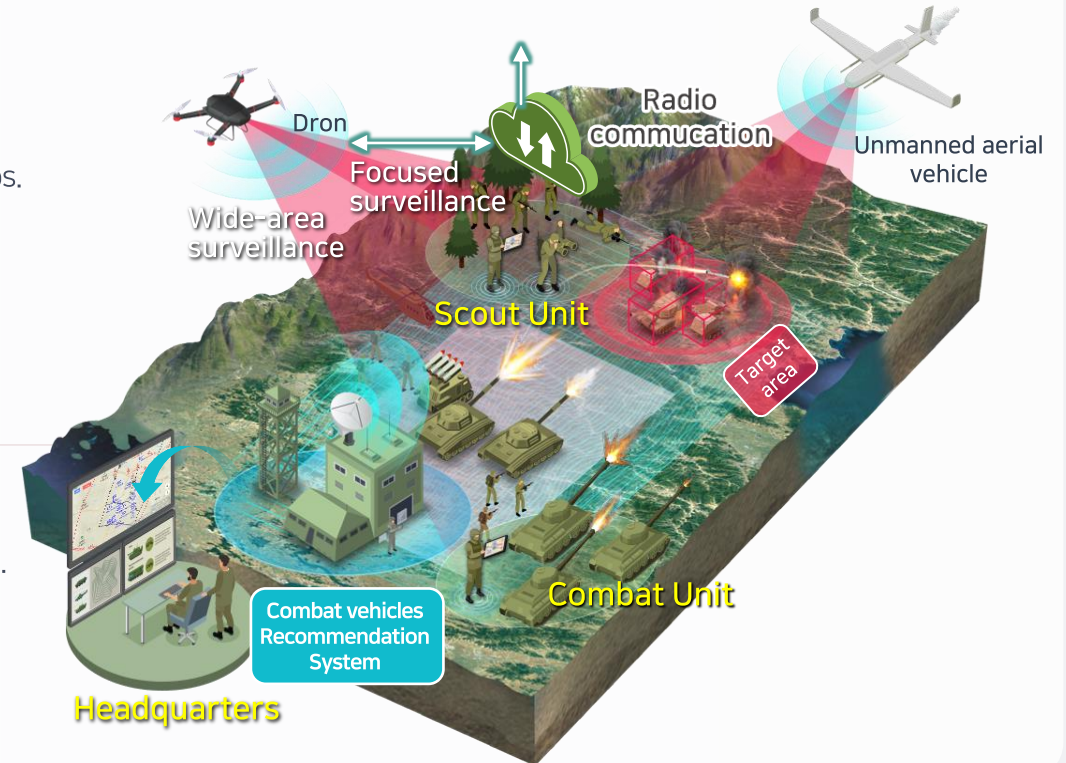
Details
- Use case of AI-Based Combat vehicles Operation System Development
- Developed AI recognition models capable of identifying enemy combat equipment.
- Created optimized firepower recommendation models for various scenarios.
- Established an MLOps-based training platform for AI model development.
- Displayed target information and firepower recommendations on a web GIS-based map.
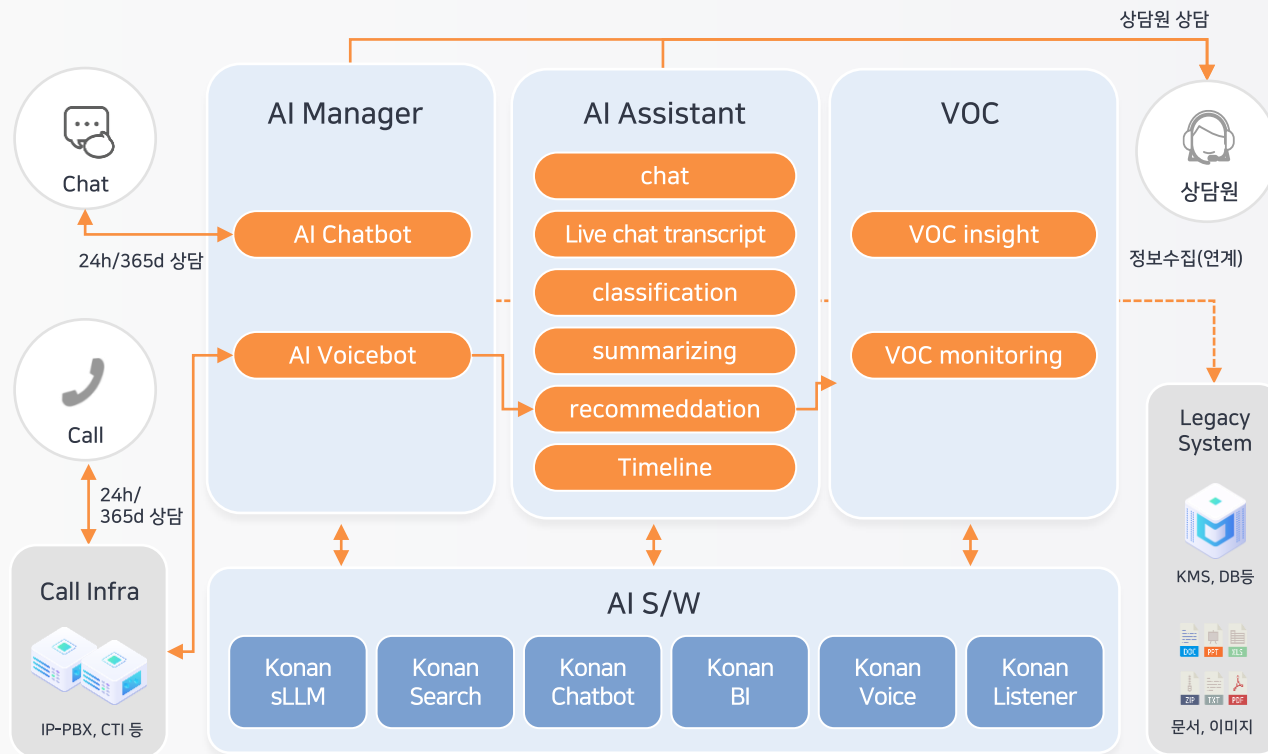- Developed a drone communication interface for real-time.

Benefits
- Provides command and control support as an AI advisor for strategic and efficient strike tactics in network-based air and ground combat operations.
- Establishes an MLOps-based AI platform optimized for K-defense.
- Ensures efficient budget allocation in the defense sector, considering the declining domestic population.

Dron — Focused surveillance — Radio commucation — Unmanned aerial vehicle — Wide-area surveillance — Scout Unit — Target area — Combat Unit — Combat vehicles Recommendation System — Headquarters

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Boost CX, Konan AICC

Konan AICC is an AI Contact Center solution that enhances both operational efficiency and customer experience. By integrating AI technologies such as speech recognition, speech synthesis, text analysis, and conversational agents, it supports the implementation of AI agents that interact with customers just like a human representative.

Chat

24h/365d 상담

Call

24h/365d 상담

Call Infra

IP-PBX, CTI 등

AI Manager
- AI Chatbot
- AI Voicebot

AI Assistant
- chat
- Live chat transcript
- classification
- summarizing
- recommeddation
- Timeline

VOC
- VOC insight
- VOC monitoring

상담원 상담

상담원

정보수집(연계)

Legacy System

KMS, DB등

문서, 이미지

AI S/W
- Konan sLLM
- Konan Search
- Konan Chatbot
- Konan BI
- Konan Voice
- Konan Listener

Feature

- AI Contact Center solution
- A solution built with in-house developed technologies.
- Applied top-tier deep natural language processing core technology.

Technology

- Auto-scaling technology
- CPU-based optimization technology
- STT, TTS, Text Analytics, AI Chatbot

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Use Case of Konan AICC

| Client | KT CS | |

Details

- Telecom Company AICC Implementation Case
- Automated transcription, classification, and summarization of voice consultations to enhance agent efficiency.
- SaaS-based service integrating Voice AI, Conversational AI, and NLU technologies.
- Chatbot services seamlessly integrated with multiple channels such as webpages, KakaoTalk, Naver TalkTalk, Slack, and Telegram.
- Provides dashboards with analysis and statistics to extract valuable business insights.

Benefits

- An AI service that enhances both operational efficiency and customer experience in consultations.
- Provides 24/7, 365-day customer support.
- Transformed text from consultations is stored in a database, enabling personalized services based on previous interactions.

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Realistic AI Voice, Konan Voice

Konan Voice is an end-to-end speech synthesis solution
that uses a single neural network technology to synthesize voice waveforms from text inputs instantly.
It has the competitive edge to quickly synthesize the most natural high-quality voice.

Technology

SSML-based user customizable speech synthesis

Prosody prediction-based super-natural speech synthesis

Chunk-based Low-latency streaming speech synthesis

Konan Voice

9:45
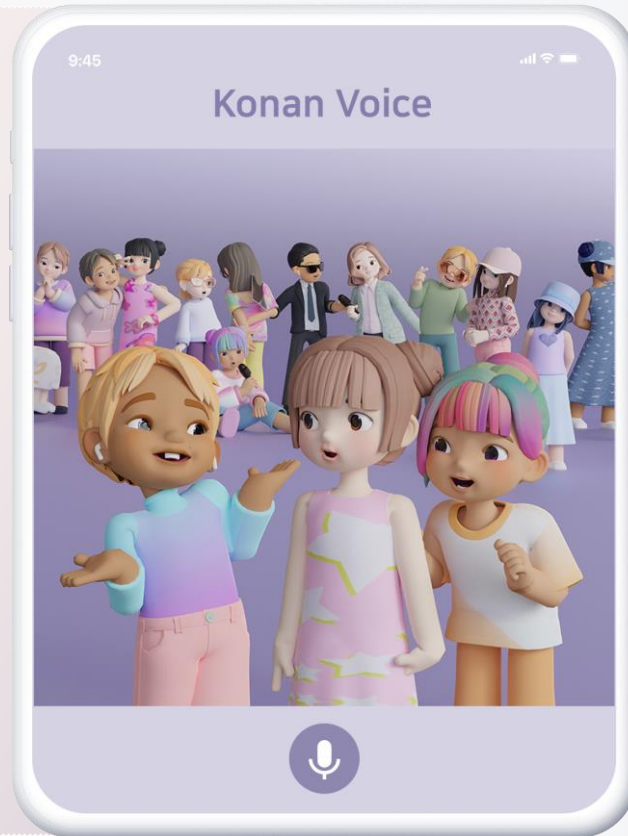
3D characters with 6 facial emotions
Type your script text and the 3D character will automatically lip-sync and dubs.(6 emotions available: happy, sad, angry, embarrassed, anxious, and nervous)

Easy to use
High-quality speech synthesis service that generates voices by selecting a voice actor and inputting a script

High-Quality Voice that Surpasses Professional
MOS 4.5+ natural, high-quality voice production capability
*Mean Opinion Score (MOS): A quality index that subjectively evaluates voice quality into five levels

Natural Reading that Understands the Context
Provides the most natural reading quality by understanding context and meaning, such as spacing correction, sentence closing-ending recognition, postposition correction, and dual expression recognition
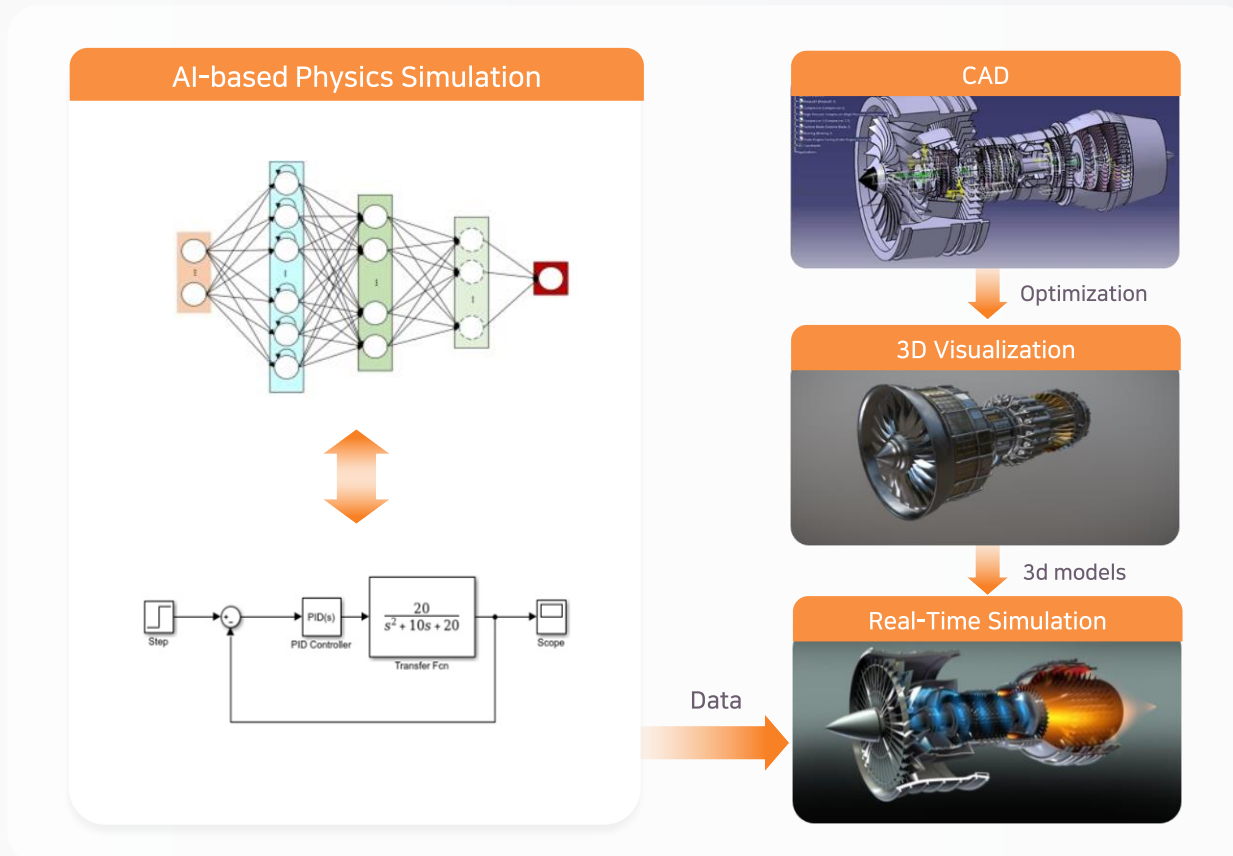
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04

Digital Twin

1) Predictive Maintenance, **Konan PHM**

2) Unmanned flight and missions, **Konan AI Pilot**

Predictive Maintenance, Konan PHM

PHM (Prognostics and Health Management) is a solution that combines digital twins and AI technologies (PBDL and RL) to help diagnose equipment/component failures and make residual life prediction decisions.

AI-based Physics Simulation

CAD

Optimization

3D Visualization

3d models

Real-Time Simulation


Data

Feature

- AI analytics service based on Deep Learning
- Monitoring function for faster fault diagnosis and lifetime prediction in the field
- When equipment/parts fail, it helps to find the cause and make decisions to solve it

Key Technologies

- Time Series Sensor Data–Based Deep Learning Diagnostic Algorithm
- Physical Simulation Interlinked Deep Learning (PINN) Algorithm
- Real-time, high-quality visualization
- Digital twin for fault diagnosis/prediction/cause analysis of equipment

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Autonomous flight, Konan AI Pilot

Konan AI pilots can team up and collaborate with pilots.

It learns and understands missions like a human and can perform high-risk missions on behalf of humans.

Autonomous
Flight Simulation

Team up with
human pilots

Installed on an UAV*
to perform high-risk missions
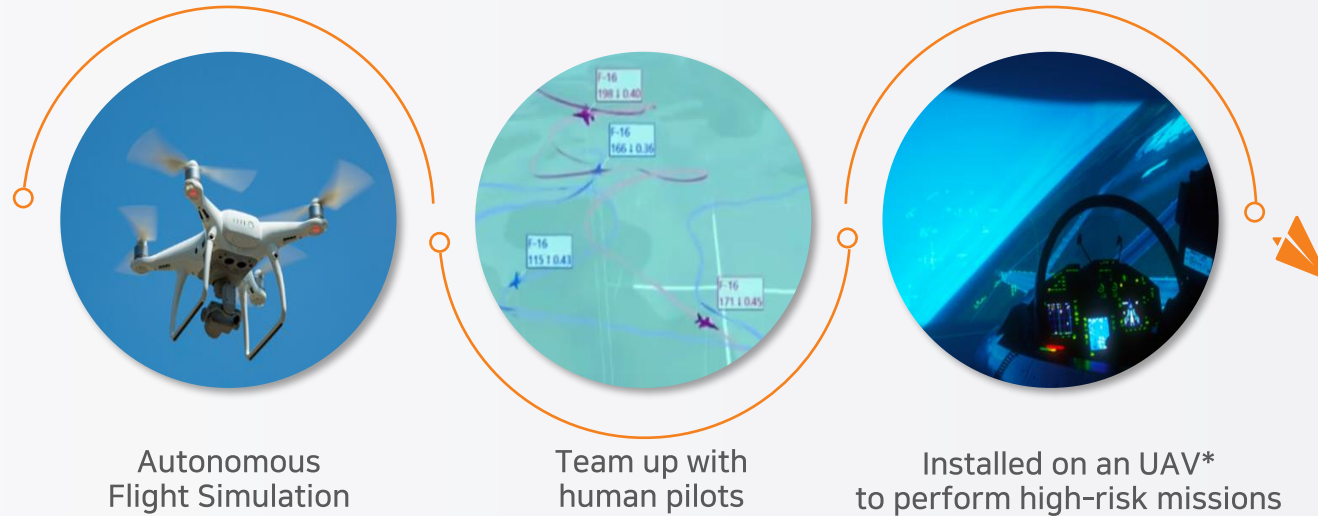
Feature

• Simulated engagement training with human pilots, including many-to-many engagements
• Perform missions for tactical purposes and provide a briefing system to analyze/validate them
• Realistic mission rehearsal and simulation of edge cases* at low cost

*Edge cases: rare situations, extreme situations

Key Technologies

• Autonomous flight simulation utilizing hybrid reinforcement learning
• 3D rendering technology that visualizes real fighters
• Installed on an UAV* to perform high-risk missions instead of humans
• Voice recognition command and control

*UAV: Unmanned Aerial Vehicles

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Technologies

1) STT

2) TTS

3) Vision AI

4) MLOps

5) Deep Learning Framework

6) Digital Twin Framework

STT

D-Cheeps delivers highly accurate speech recognition results using state-of-the-art deep learning-based advanced speech recognition algorithms.

High-quality speech recognition

Using advanced deep learning algorithms, we deliver highly accurate Korean speech recognition.

Multichannel STT

One STT server 1copy offers multichannel processing capabilities, handling up to 50 channels (full duplex) or 100 channels (half duplex) simultaneously.

Reliable operation

Provides a reliable server distribution architecture that manages network load for concurrent users based on L4 switch technology.

D·Cheeps
Deep Learning Speech

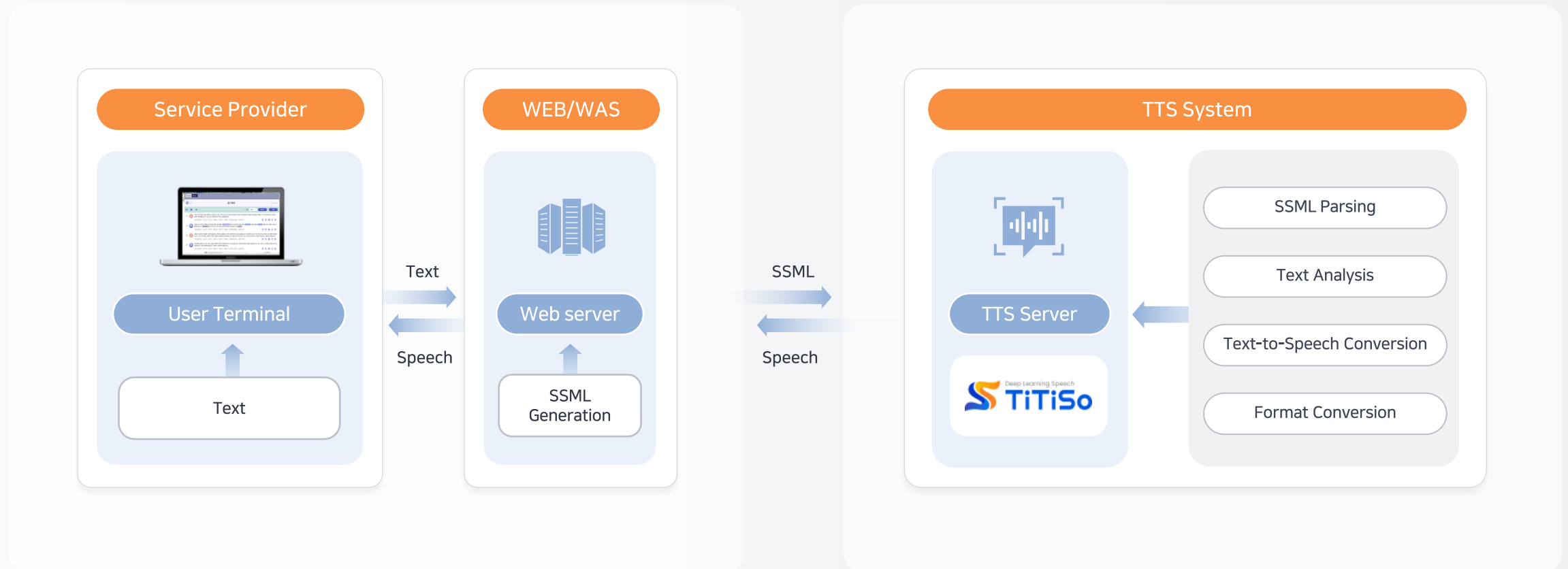## Versatile application

Provides basic speech-to-text conversion along with word and sentence-level recognition confidence and time boundary information via API, enabling use in various additional services.

Developed with our own

We develop the core technologies of our speech recognition products in-house, ensuring reliable solution delivery and responsible technical support.

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TTS

TiTiSo is a cutting-edge text-to-speech system that delivers highly natural, multilingual speech. It leverages state-of-the-art Conformer-based deep learning and proprietary prosody modeling to provide the highest level of natural speech synthesis in the country. Additionally, it supports ultra-low latency, multichannel speech synthesis on a CPU-based system.

Service Provider

User Terminal

Text

WEB/WAS

Web server

SSML
Generation

Text

Speech

TTS System

TTS Server

Deep Learning Speech
TiTiSo

SSML

Speech

SSML Parsing

Text Analysis

Text-to-Speech Conversion

Format Conversion

Vision AI

Konan Vision AI is an on-device AI that recognizes people and faces in real-time. It can be used to identify rescue targets in inaccessible indoor disaster situations or large-scale outdoor emergencies.

Konan Vision AI – Indoor SAR
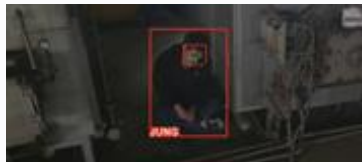
Poor Lighting

Motion Blurring


Far Distance

Pose Variation

- Real-time, simultaneous multi-vision tasks (detection, tracking, classification, identification) on NVIDIA Jetson series.
- Applicable for human and facial recognition in stationary and mobile surveillance (CCTV, drones, delivery robots).
- Quickly identifies victims or rescue targets in indoor disasters or terrorist situations for rescue efforts.

Konan Vision AI – Outdoor SAR

Person Detection Under Challenging Conditions
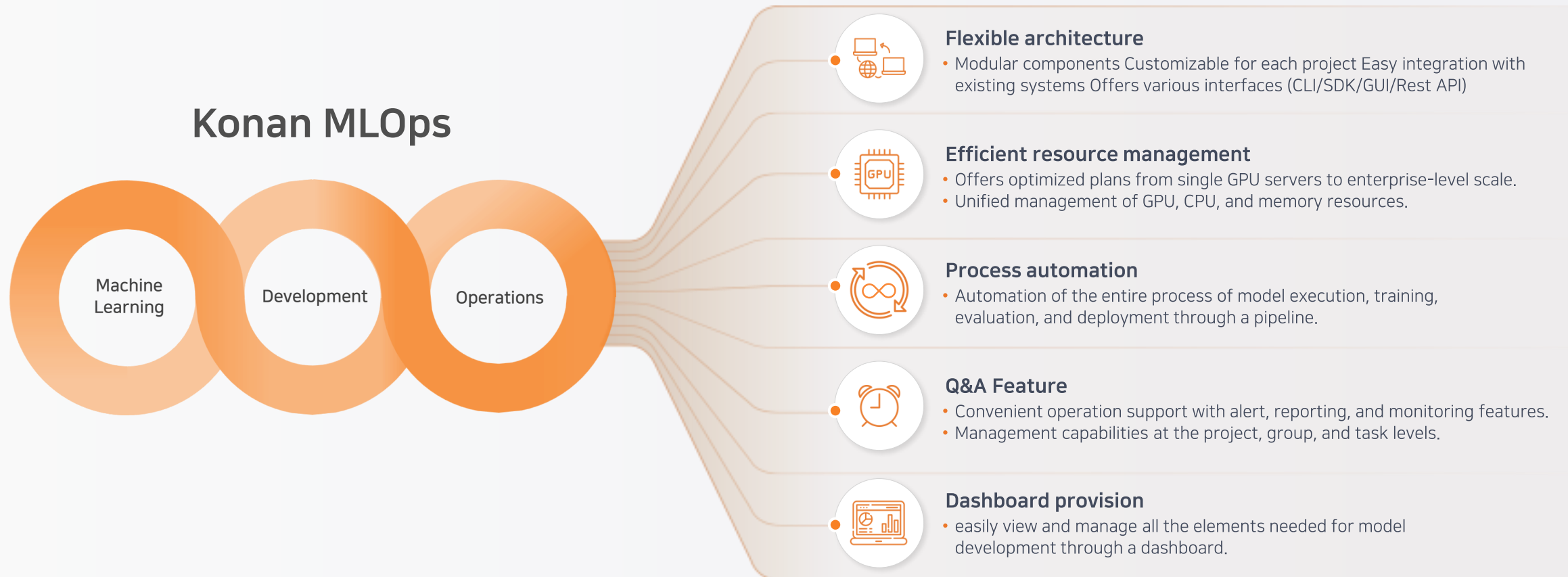
- Delivers reliable object recognition at high altitudes with specialized training for small objects.
- Reduces object ID loss using Adaptive Object Data Association, enhancing performance under camera motion blur or unstable communication.
- Maintains tracking through frame drops by linking object features with Enlarged Adaptive Object Data Association.
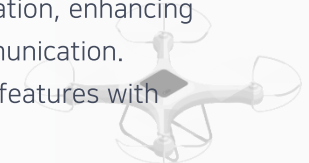
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MLOps

Konan MLOps automates the entire process from deep learning model training to deploying, providing operation convenient.
It is also a flexible solution that provides an optimized operating environment tailored to each project's characteristics.

Konan MLOps

Machine Learning

Development

Operations

Flexible architecture
- Modular components Customizable for each project Easy integration with existing systems Offers various interfaces (CLI/SDK/GUI/Rest API)

Efficient resource management
- Offers optimized plans from single GPU servers to enterprise-level scale.
- Unified management of GPU, CPU, and memory resources.

Process automation
- Automation of the entire process of model execution, training, evaluation, and deployment through a pipeline.

Q&A Feature
- Convenient operation support with alert, reporting, and monitoring features.
- Management capabilities at the project, group, and task levels.

Dashboard provision
- easily view and manage all the elements needed for model development through a dashboard.

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Deep learning framework

Using entirely in-house technology, We has developed our own deep learning framework. Dtrain supports an on-premises deployment method that prevents security incidents such as model leakage and data breaches from the source.
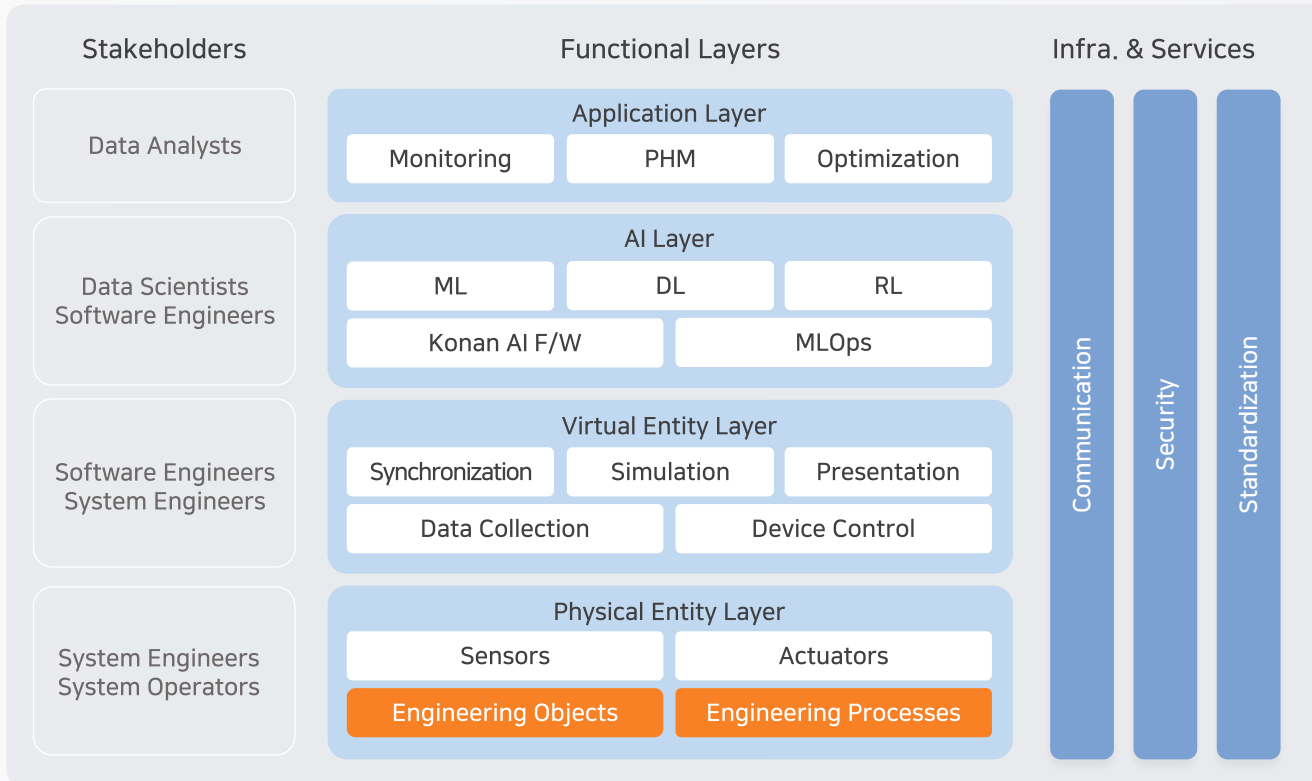
dtrain

AI platform	Next-gen AI testbed
Various Apps	Web services

GPU GPU GPU GPU GPU GPU GPU

REST API

Low-level API

High-level API

CUDA integration
Deep learning engine
Various DL algorithms support

Eco system
Multi-tasking Data Loader DL
Model Visualization/deployment

Python front-end interface

Model library

Python example program
Various DL Models
Outputs for each model

Python interpreter

General user

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Digital Twin framework

Konan Technology is developing a digital twin framework applicable to the aerospace and defense industries. This framework supports system diagnostics, predictions, and optimization tasks through simulations within a digital twin environment.

Stakeholders

Data Analysts

Data Scientists
Software Engineers

Software Engineers
System Engineers

System Engineers
System Operators

Functional Layers

Application Layer
| Monitoring | PHM | Optimization |

AI Layer
| ML | DL | RL |
| Konan AI F/W | | MLOps |

Virtual Entity Layer
| Synchronization | Simulation | Presentation |
| Data Collection | | Device Control |

Physical Entity Layer
| Sensors | Actuators |
| Engineering Objects | Engineering Processes |

Infra. & Services

Communication

Security

Standardization

Feature

- A high-resolution digital twin development framework for high-quality PLM decision-making.
- ISO 23247 standard framework

Functionality

- Cross Commissioning using Digital Twin
- Interoperability between heterogeneous Digital Twin objects
- Building explainable decision-making application models
- High-speed PINN (Physics Informed Neural Network) inference engine
- Synthetic data generation for AI training
- Hardware-accelerated high-quality visualization

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Thank you

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