WORLD ECONOMIC FORUM

Korea Centre for the Fourth Industrial Revolution

GYEONGGI-DO

GBSA
Gyeonggido Business & Science Accelerator

Korea Frontiers

2025 Finalists

Foreword

Hyundae KIM,
Head of C4IR Korea

A new industrial revolution, comparable to the Industrial Revolution that began in 18th-century Britain and transformed the entire world, is now unfolding before us in the 21st century. The rapid technological revolution represented by AI and robotics will fundamentally change industries, economies, jobs, and our very way of life.

According to the World Economic Forum's Future of Jobs Report 2025, 60% of employers expect business innovation to occur by 2030 as a result of technological change. It is also projected that approximately 40% of job skills required will change and over 20% of jobs will either disappear or be newly created by 2030.

Korea Centre for the Fourth Industrial Revolution (C4IR Korea) was established in January 2025 as Korea's first specialized institution dedicated to responding to the Fourth Industrial Revolution, following the cooperation agreement signed between Gyeonggi Province and the World Economic Forum in June 2024.

C4IR Korea, benefiting from access to the extensive and premium intelligence resources and global networks created and operated by the World Economic Forum's outstanding experts, plays a unique role in Korea. Supported by Gyeonggi Province—the hub of Korean industry and innovation—it serves as a leading platform for cutting-edge knowledge dissemination, global connectivity, and support for innovator communities.

Currently, more than twenty C4IRs are operating across the world through the World Economic Forum's global network, each selecting its own key theme and conducting various initiatives based on it. For C4IR Korea, after careful consideration by the Gyeonggi Provincial Government, even prior to its establishment, the following three themes were chosen as strategic pillars: AI-powered ① Startups, ② Advanced Manufacturing, ③ Climate Adaptation.

In particular, the Startup theme is uniquely designated by C4IR Korea among all C4IRs worldwide. This reflects the strong determination of Gyeonggi Province and Governor Dong Yeon KIM, who envision Korea and the Gyeonggi Province as a "Startup Paradise," and it has also drawn the attention of the World Economic Forum. In this era of revolutionary technological and industrial transformation, the theme holds even greater meaning, as the opportunities and possibilities for Korean startups—those driven by ambition to expand globally through innovative technologies—are rapidly growing.

Every year, the World Economic Forum selects startups from around the world that demonstrate innovation and potential global impact, operating and supporting Innovator Communities for them. With its establishment, C4IR Korea decided to create a Korean Innovator Community in collaboration with the World Economic Forum. The 30 startups selected this year as Korea Frontiers are the leading representatives that will constitute this community.

There is an old saying that "it takes a village to raise a child." Likewise, it also takes a village to nurture a startup. It is my sincere hope that the first-ever "Korea Innovators Community Summit," jointly hosted by the World Economic Forum and Gyeonggi Province, will become the stepping-stone toward building a good "village" — a place where national representative startups aspiring to expand globally and make a positive impact, together with various Korean innovation ecosystem stakeholders, can share thoughts, learn from one another, and support one another. Then, those startups will one day grow into great trees and form a lush forest that will, in turn, nurture us.

Introduction

World Economic Forum (WEF)

The World Economic Forum is the international organization for public-private cooperation. It brings together leaders from government, business, academia and civil society to advance a more sustainable and inclusive future.

Through its Innovator Communities, the Forum connects over 400 mission-driven start-ups worldwide to collaborate on technology and solutions that address global challenges.

Centre for the Fourth Industrial Revolution Korea (C4IR Korea)

The Centre for the Fourth Industrial Revolution Korea (C4IR Korea) was established in January 2025 by the Gyeonggi Provincial Government in collaboration with the World Economic Forum. It is the first Centre of its kind in Korea and part of a global network of 21 Centres.

Located in Pangyo, Gyeonggi Province—Korea's "Silicon Valley"—C4IR Korea serves as a national hub for innovation, connecting start-ups, policymakers and global experts to shape the future of technology and entrepreneurship.

Through its collaboration with the Forum, C4IR Korea connects Korean innovators to the Forum's Innovator Communities network, enabling exchange, collaboration, and participation in international innovation dialogues.

Korea Frontiers Program

The Korea Frontiers Program is C4IR Korea's flagship initiative, developed with the World Economic Forum to help Korean start-ups expand globally.

Each year, a select group of high-potential start-ups joins the program to access global networks, tailored support and opportunities to participate in major international events such as the Annual Meeting of the New Champions.

By engaging with the Forum's Innovator Communities, participants become part of a global network of leading technology start-ups driving responsible innovation worldwide.

Korea Frontiers Finalists 2025

No.	Company Name	CEO Name
1	aetech	Taehyung Park
2	AIWORKX	Seokwon Yoon
3	ASET	Seokjung Park
4	colosseum	Jinsu Park
5	DAQUV	Yeji Yoon
6	EFLOW	Suhan Yoon
7	FLEXELL SPACE	Taehun Ahn
8	i-ESG	Jongwoong Kim
9	Illimis therapeutics	Sanghoon Park
10	Inflab	Hyungjoo Lee
11	ISAAC ENGINEERING	Changsoo Kim
12	Korea Quantum Computing	Joonyoung Kim
13	MICROT	Jongchul Han
14	Newnop	Seongbong Kang
15	OceansBio	Hyunwoong Lee
16	Piehealthcare	Youngkyu Lee
17	PREDICTIVE AI	Sajung Yun
18	QUNOVA	Joonkoo Lee
19	RadaHaim	Heonju Lee
20	RAWGA	Kyungsoo Ha
21	reco	Keunho Kim
22	REPLA	Dongeun Seo
23	sdt	Jiwon Yoon

No.	Company Name	CEO Name
24	SOTERIA	Jongman Kim
25	supergate	Seungpil Shim
26	TALOS	Tackeun Kim
27	VESSL AI	Jaeman Ahn
28	VINSSEN	Chilhwan Lee
29	WEFLO	Euijung Kim
30	WISEAI	Hyungseok Song

aetech

박태형 (Taehyung Park)

AI-based precision waste sorting robot development company

Aetech's AI-based waste sorting robot, Atron, achieves a recognition accuracy of 99.3% and can sort up to 96 pieces per minute. It uses both RGB sensors for shape recognition and hyperspectral sensors for material analysis, and features both a fast suction gripper and a precise finger gripper for waste handling. All hardware and software are developed in-house, allowing for extensive product customization to meet diverse site requirements.

AIWORKX

윤석원 (Seokwon Yoon)

AI-based data automation and industrial efficiency solution company

AIWORKX is an AI-driven data and automation solutions company focusing on three main products: BlackOlive (automated analysis of 3D, BIM, and point cloud data), TedWORKS (mobile app automated testing and CI/CD), and OmniAgent (enterprise knowledge and workflow AI agent). Leveraging global project experience and proprietary technology, we are innovating efficiency and sustainability across various industries including construction, manufacturing, finance, and mobility.

ASET

박석정 (Seokjung Park)

All-solid and hybrid electrolyte development
lithium-ion battery solution company

ASET develops next-generation solid-state and composite electrolyte membranes designed for enhanced safety and durability, addressing the limitations of conventional lithium-ion batteries. By integrating LLZO-based oxides with polymer and interface control technologies, the company has achieved high ionic conductivity and thermal stability, offering a large-area, mass-producible composite membrane solution applicable to ESS and EV batteries.

colosseum

박진수 (Jinsu Park)

AI-based global logistics automation platform company

Colosseum provides the AI-powered logistics fulfillment platform COLO AI to e-commerce companies, global sellers, manufacturers, and distributors. The platform covers all processes including storage, inventory management, order processing, packaging, shipping, returns, and settlement management. It operates through collaboration with over 53 global logistics networks and more than 14 international express and forwarding partners. COLO AI automates and optimizes order processing, inventory management, and delivery, combining an on-demand warehouse model with a global logistics network to offer a more flexible and scalable solution than traditional 3PL services.

DAQUV

윤예지 (Yeji Yoon)

Natural language-based enterprise data analysis AI solution company

For an AI agent to fully automate day-to-day business tasks, it needs to seamlessly integrate the enterprise database into its functionality. In other words, an AI agent is only as capable as its control over the database. DAQUV, the leading NL2SQL application developer in South Korea, aims to provide enterprise AI agents the go-to tool for database integration. Throughout 2025, we have supplied the semantic query tool for various enterprise banking-related agents, and based on those experiences, we have developed QUVI, a semantic database query tool for ai agents that takes into account the complex nature of enterprise databases.

EFLOW

윤수한 (Suhan Yoon)

Eco-friendly hydrogen energy-based zero-emission mobility and power solutions company

EFLOW is a startup specializing in hydrogen-based solutions (HOASIS and HYDEE). Over the next two years, our goals include conducting smart city and logistics hub PoCs, launching at least three pilot projects, establishing B2G and B2B partnerships, and achieving key KPIs such as carbon and noise reduction. Leveraging our English communication skills and overseas IR experience, we strive to advance global collaboration while contributing to Net Zero goals.

FLEXELL SPACE

안태훈 (Taehun Ahn)

Ultra-lightweight high-efficiency solar cell startup for space and aerospace

Flexell Space is an innovative startup developing next-generation solar cells for space and aviation applications. Utilizing perovskite and CIGS-based tandem solar cells, which offer lightweight, low-cost, and large-area production compared to traditional gallium arsenide (III-V), we provide optimized energy solutions for various applications including satellites, drones, stratospheric aircraft, and space solar power stations.

i-ESG

김종웅 (Jongwoong Kim)

AI-based ESG risk and data integration management platform company

i-ESG is a platform that provides AI- and big data-based ESG risk and data management solutions, supporting the entire ESG process from diagnosis and reporting to supply chain and greenhouse gas management, and data disclosure. It automates and streamlines complex ESG responses, helping companies enhance both sustainability and competitiveness.

Illimis therapeutics

박상훈 (Sanghoon Park)

TAM receptor-based immune disease and brain disease antibody drug development company

The innovative platform antibody drug is designed based on the TAM receptors, which are key signaling pathways regulating cell homeostasis. It induces phagocytosis without triggering inflammatory or neuroinflammatory responses, thereby minimizing side effects caused by inflammation. Additionally, it improves the functions of immune cells such as glial cells and macrophages, enabling the development of novel drugs for degenerative brain diseases and immune disorders that existing antibody drugs have not been able to overcome.

Inflab

이형주 (Hyungjoo Lee)

Korea's leading online practical education and global learning platform company

Inf learn is a leading online platform for practical education in Korea, founded on the vision of providing equal growth opportunities. The platform offers more than 4,700 practical courses in fields such as development, design, data, and marketing, accessible seamlessly on both mobile and PC. Learners can enhance their growth experience through community-driven Q&A and interactive learning. Recently, Inflearn has expanded rapidly into the global education market by offering Korean-language courses in multiple languages-including Japanese, English, and Vietnamese - using proprietary AI-based subtitling, translation, and dubbing technologies.

ISAAC ENGINEERING

김창수 (Changsoo Kim)

AI-integrated solution platform company for manufacturing industry

ISAAC Engineering develops Ultivis AI Agent, an integrated AI solution designed to address the complex challenges of the manufacturing industry in South Korea. Offered both on-premise and in the cloud to meet the diverse needs and scale of manufacturing companies, the Ultivis AI Agent drives innovation in safety, productivity, and security. The solution consists of six core AI agents: 1. AI Safety Management Agent 2. Knowledge Q&A Agent 3. Work Automation Agent 4. AI Report Generation Agent 5. PLC Code Generation Agent and 6. I/O List Generation through P&ID drawing analysis.

Korea Quantum Computing

김준영 (Joonyoung Kim)

Quantum computing, quantum security, and AI infrastructure technology company

Korea Quantum Computing (KQC) develops technologies and products across three key domains: quantum computing, AI infrastructure, and post-quantum cryptography (PQC)–based security. The company conducts algorithm research and development using quantum computing and provides quantum security solutions through hardware security modules (HSM) and bio-based key authentication technologies. In the AI infrastructure sector, KQC operates an AI-dedicated data center located at Digital Edge in Bupyeong.

MICROT

한종철 (Jongchul Han)

Microinvasive implant development and commercialization company for glaucoma treatment

Microt develops and commercializes innovative ophthalmic medical devices addressing major eye diseases such as glaucoma, which affects approximately 80 million people worldwide and 1 million in Korea, making it the second leading cause of blindness globally. The company has introduced A-stream, a minimally invasive glaucoma surgery (MIGS) implant - the first of its kind in Korea - designed to make surgical treatment safer, simpler, and more effective. A-stream is currently registered with over 80 medical institutions in Korea, covered by national insurance, and has been used in more than 2,000 surgeries since its launch. Microt is also in the process of obtaining FDA approval, targeting global market entry by 2028.

Newnop

강성봉 (Seongbong Kang)

AI-based factory quality inspection and productivity enhancement solution company

NewNop is an AI and digital transformation (DX) company certified with ISO 9001 and 14001, providing smart factory quality management solutions. Its offerings include AI vision inspection, defect cause analysis, productivity prediction, predictive maintenance, AI recipe recommendation, and ERP/MES-based chatbot solutions, enabling factory managers to make data-driven decisions. The company is currently conducting POCs and contracts in the metal and textile industries, both domestically and overseas, and plans to expand with a scalable SaaS model integrated with ERP and MES systems.

OceansBio

이현웅 (Hyunwoong Lee)

AI-based electronic medicine development and digital healthcare company

OceansBio is a digital healthcare company developing AI-based iVNS and taVNS electroceuticals. The company has secured technologies including miniaturized vagus nerve stimulator circuits, impedance-matched current control, and PPG-based HRV monitoring, and has achieved world-class accuracy with its AI algorithms that predict early symptoms using real-time EEG and ECG data. OceansBio aims to lead the global market through the commercialization of wellness devices and medical equipment.

Piehealthcare

이영규 (Youngkyu Lee)

AI-based ophthalmology and brain disease integrated diagnostic solution company

Piehealthcare
주식회사 파이헬스케어

Piehealthcare is a healthcare technology company developing DOCTOR EYE, an AI-based diagnostic support solution. Its flagship product, DOCTOR EYE X-EYE, enables rapid interpretation of major ophthalmic diseases within seconds and is currently undergoing clinical trials and regulatory approval with the Ministry of Food and Drug Safety. The company is also developing DOCTOR EYE X-BRAIN, the world's first model designed to predict brain and vascular diseases using retinal images. Looking ahead, Piehealthcare aims to build an integrated diagnostic platform capable of detecting not only ophthalmic but also brain and cardiovascular diseases through a single retinal image capture.

PREDICTIV AI

윤사중 (Sajung Yun)

AI-based personalized early cancer diagnosis and preventive medicine solution company

PREDICTIV
THE FUTURE OF MEDICINE. TODAY.

Predictiv AI, Inc. aims to achieve healthy longevity of 100 years through cutting-edge AI and precision predictive preventive medicine. It leads innovative medical advancements and personalized treatment via low-cost early cancer diagnosis based on liquid biopsy, proactive health management through AI-based organ function monitoring, pharmacogenomics analysis, and an AI drug discovery platform.

QUNOVA

이준구 (Joonkoo Lee)

NISQ quantum computer-based computational chemistry and optimization solution company

QUNOVA COMPUTING

Qunova Computing develops quantum algorithms and software services that deliver real-world value in industrial settings. Their core HI-VQE/HI-VQO algorithms leverage NISQ quantum computers to provide faster and more accurate results in computational chemistry and combinatorial optimization than traditional methods. With proven performance, Qunova collaborates with companies and research institutions to apply their technology to production-level problems. Additionally, they offer specialized quantum capabilities addressing data scarcity and power issues in the AI industry, driving future industrial innovation.

RadaHaim

이헌주 (Heonju Lee)

3D organoid-based animal testing alternative bioanalytical company

RadaHaim is a biotech company developing a standardized organoid analysis platform to replace animal testing. They possess core technologies including large-scale production of uniform organoids based on 3D free-floating culture, seed generation and quality control, and bio-ink mixing and automation processes. Based on these, they offer toxicity evaluation, mechanism analysis (PoC/MoA) services, organoid assay kits, and customized CDMO services. Through collaboration with the NAMs-VQN network, RadaHaim plans to commercialize analysis kits by 2026 to support research and development for global pharmaceutical companies, CROs, and biotech firms, setting a new standard for next-generation preclinical trials.

RAWGA

하경수 (Kyungsoo Ha)

Natural ingredient development and supply bio deep tech company

Rawga Co., Ltd. is a bio deep-tech company that builds an innovative ingredient library based on proprietary, naturally derived technologies, setting global premium standards. Its core ingredients—VC-H1, VC-T1, and RUC-II—have completed development, clinical trials, and commercialization, demonstrating both scientific reliability and market viability. Leveraging cost competitiveness through proprietary IP and its own R&D and production infrastructure, the company has secured both stable supply and scalability. Based on this foundation, Rawga operates B2B (ingredient supply) and B2C (own brand) businesses, expanding into anti-aging, healthcare, and medi-grade sectors.

reco

김근호 (Keunho Kim)

Digital-based integrated waste management platform company

RECO (Resource Connector) is a company that sets new standards in waste management by driving digital transformation and improving the inefficiencies of the traditionally fragmented waste industry. Its flagship service, UpBox, provides a smart, integrated waste management solution covering diagnosis, collection, transportation, and data management, ensuring regulatory compliance and transparency throughout the entire waste disposal process. By maximizing customer convenience and enabling transparent tracking from waste generation to final processing, RECO leads the way in modernizing and streamlining waste management.

REPLA

서동은 (Dongeun Seo)

Microorganism and enzyme-based
eco-friendly waste plastic recycling company

Repla is an eco-friendly materials company that develops the BioTank system, which recovers high-purity polypropylene (PP) from mixed plastic waste using selective decomposition technology based on microorganisms and enzymes. This technology operates at ambient temperature and pressure with low energy and carbon emissions, offering innovation by selectively decomposing specific polymers while simultaneously removing odors and additives. Riplra's business model involves reliably supplying high-quality PCR suitable for global high-value industries, while pursuing both equipment sales and in-house raw material production and supply.

sdt

윤지원 (Jiwon Yoon)

Quantum computing and communication
ultra-precision component design and manufacturing ODM company

SDT designs, manufactures, and supplies ultra-precision components essential for core quantum technologies such as quantum computing, communication, and sensing, leveraging Korea’s advanced manufacturing capabilities. As the nation’s only Quantum-Grade ODM company capable of realizing quantum superposition and entanglement—key phenomena for the complex operation of quantum computers—SDT collaborates with leading global companies and drives the development of Korea’s quantum technology ecosystem.

SOTERIA

김종만 (Jongman Kim)

Low-power, high-performance semiconductor chip development
and export company

SOTERIA is a Korean fabless semiconductor company specializing in core technologies for implementing HPC and LLM accelerators, including 0.3 V NTV ultra-low-power operation, full-custom design, cell re-characterization, and dynamic logic. The company focuses on maximizing computing efficiency and throughput in data centers while minimizing power consumption to achieve both scalability and TCO efficiency. Beyond chip supply, SOTERIA pursues an export-oriented business model by providing optimized solutions and customized accelerator chips tailored to partners’ needs.

supergate

심승필 (Seungpil Shim)

Autonomous driving and logistics AI semiconductor development company

Supergate has successfully commercialized Korea's first CPU-based AI computer, an autonomous driving AI system semiconductor delivering 160 TOPS, and one of the largest video AI solutions for safety monitoring in Asia's major logistics centers. It possesses full capabilities to develop customized system semiconductors for high-performance computing (HPC) and artificial intelligence, spanning from edge to cloud environments. Core technologies include PPU, PE, scalable architecture, efficient power management, high-performance AI accelerators, multi-video sensor processing, image signal processors, 3D point-cloud preprocessing, multi-core CPUs, support for diverse interfaces, and high-performance edge-AI processing capabilities.

TALOS

김택균 (Tackeun Kim)

AI-based health screening data disease risk prediction medical startup

Talos is a medical AI startup that uses artificial intelligence to predict serious diseases. Its main product, ANRISK®, is the world's first commercial solution that assesses the risk of brain aneurysm using only health checkup data, offering a safer and more cost-effective alternative to traditional imaging tests. It also provides personalized reports with tailored goals and lifestyle guidelines to help individuals manage their risk levels. ANRISK® is already commercialized and generating revenue in Korea, with plans to expand to European and U.S. markets.

VESSL AI

안재만 (Jaeman Ahn)

Global GPU-based AI model training and operation platform company

VESSL AI is an orchestration platform that connects and manages GPU resources globally, allowing large-scale AI models to be trained, deployed, and operated. It supports integrated multi-cloud and on-premises environments, offering enterprise-grade infrastructure with cost optimization, automation, and security features.

VINSSEN

이칠환 (Chilhwan Lee)

Hydrogen fuel cell and electric battery eco-friendly ship propulsion system development and supply company

Vinssen develops and supplies hydrogen fuel cell and electric battery propulsion systems for ships, contributing to the International Maritime Organization's goal of achieving net-zero carbon emissions by 2050. The company not only provides in-house–developed fuel cells but also delivers modular propulsion systems and comprehensive engineering services. Its fuel cell systems offer excellent scalability through parallel configurations, making them suitable for vessels of various sizes, from small boats to large ships.

WEFLO

김의정 (Euijung Kim)

AI-based non-contact inspection and check solution company for electric mobility

Weflo provides inspection and diagnostic solutions for next-generation electric mobility, including drones, air taxis, and electric vehicles. Its core technologies lie in sensor optimization and domain knowledge–driven vertical AI design. Building on these capabilities, the company delivers non-contact inspection and diagnostic solutions applied across the manufacturing, operation, and maintenance processes of mobility systems, as well as in the defense sector.

WISEAI

송형석 (Hyungseok Song)

AI-based medical customer center solution company

WISEAI provides an AI-powered customer center solution tailored for the healthcare sector, built on its proprietary AICC platform. The platform enables outbound and inbound call automation, appointment and consultation management, and EMR/CRM-integrated RPA functions. Through these technologies, hospitals and clinics enhance patient engagement and operational efficiency while improving revenue performance. The solution has been successfully implemented across various medical institutions, including dental, plastic surgery, dermatology, and oriental medicine clinics. With HIPAA-compliant technology and global scalability, WISEAI is also expanding into international healthcare markets beyond Korea.

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