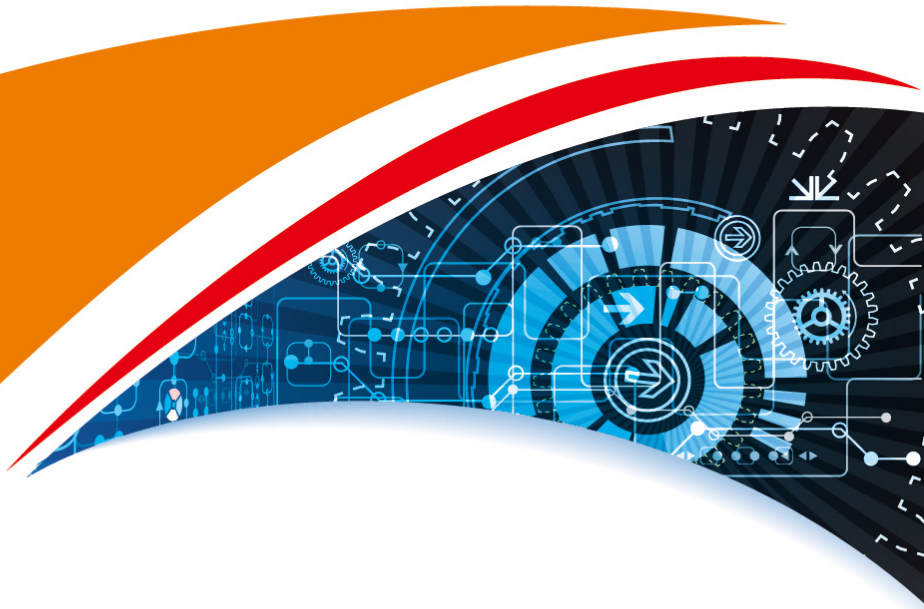# 2019
KOREA AI Startup

We are game changers

WE ARE GAME CHANGERS

2019

Greetings

I'm Kim Byung Hun, Chairman of Korea artificial intelligence association.

Currently in 2019, AI technology is changing its state from 'finding out' to 'impact' in important business decisions.

Using the estimate of the progress AI technology has made progress in the past decade makes very difficult to estimate the progress the AI technology will make in the next decade.

AI already has implemented in many industries, it will be difficult to find an industry that won't be affected by AI technology.

Industries based on AI technology is crucial asset even for the national point of view.

Therefore the KORAIA has formed an organization called 'AI companies cluster' for networking, knowledge and synergy between the participants.

We expect to benefit all of the participants, such as business and government.

We proudly introduce the rising stars of the Korean AI companies and announce 'AI cluster', which will be the framework of the AI activities.

The new future has already began.

Kim Byung Hun, Chairman of KORAIA.

WE ARE GAME CHANGERS

TITLE

2019
KOREA AI Startup

We are game changers

AI

01 ▶ 4S Mapper

4S Mapper is specialized in satellite, aviation and drone image processing and AI (artificial intelligence) based analysis based on spatial information.

Service

DaaS (Drone as a Service)

DTM (Drone To Mapper & Drone Traffic Mapper)

Product / Service

DaaS Pano

360° panoramic images taken from the drones are automatically transferred to HTML5-based results on various mobile devices and computers though the process of real-time automatic processing (mosaic, colour correction etc.) on the cloud platform.
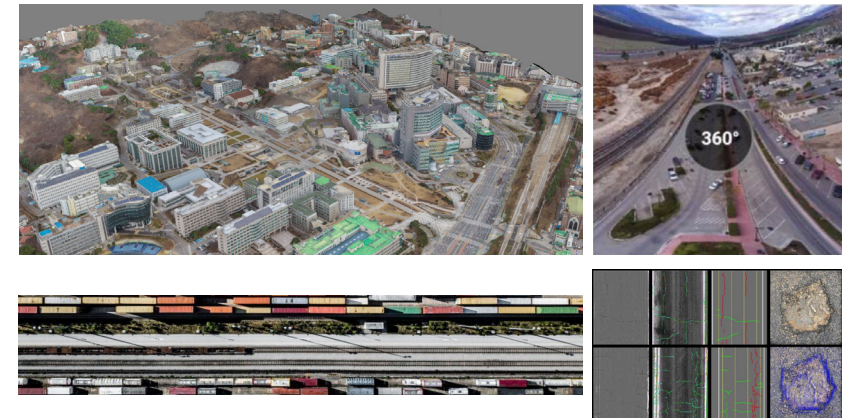
DaaS 3D

A drones image photographed for the purpose of constructing 3D spatial information is automatically processed in the cloud platform and provides analysis and result report.

DTM ML

Using drones and machine running, it is possible to take a road car line and both directions and overcome the limit of acquisition of data by the existing equipment, and you can understand the state of road pavement effectively.

DTM AI

By combining drone and artificial intelligence and big data, it is possible to build state-based management optimization system by predicting state of various facilities and to integrate with existing system.

Field and Tech	CEO	Est	Website
QA (Question Answering)	LEE Seungho (Stefano)	2015. 10	www.42maru.ai

Email	Contact	Address
withus@42maru.ai	02-6952-9201	6F, 8F, 1925, Nambusunhwan-ro, Gwanak-gu, Seoul

02 AI / Search
42Maru

· QA (Question Answering) Startup based on Deep Learning
  (Team for AI/Search Gurus)

· Core Tech : Deep Learning, Machine Reading Comprehension,
  Natural Language Understanding & Processing, Information Retrieval,
  Paraphrasing, Word Embedding

Service

Deep Semantic QA (Question Answering)

Product / Service

▶ We develop a deep learning based QA system that understands the true intention of a question and finds a single correct answer from a large unstructured dataset

▶ Currently running various AI-based projects such as: DSME's AI-based Design System for Ship building Sales Support, KT Smart Speaker Knowledge QA, LG U+ Kids' Watch TWE System

Target Industry/Service

▶ **KMS** (Knowledge Mgmt. System)

  "Save 20% of Working Time"

  - Handle Unstructured big-data
  - Semantics

▶ **Chatbot**

  "88% Coverage"

  - 24/7 customer support
  - Paraphrasing

▶ **Knowledge QA** (Question Answering)

  "98.2% Accuracy"

  - Single Answering on random topics
  - MRC (Machine Reading Comprehension)

Notable Projects

대우조선해양, AI기반 선박영업지원 설계시스템 구축

DSME's AI-based Design System for Shipbuilding Sales Support

KT Smart Speaker Knowledge QA

LG U+ Kids' Watch TWE System

Company History

▶ Investment from Techstars and participation in the accelerating program
▶ Ranked no. 1 in the SQuAD 2.0 competition (co-ranked with Google AI Team)
▶ Ministry of Science and ICT (MSIT) Award Winner, AWS AI Challenge Award Winner
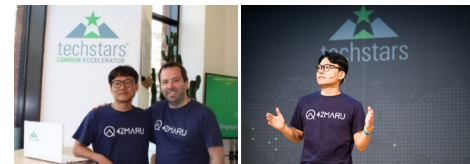
Investment from Techstars & Demoday

AWS AI Challenge Award Winner

Ministry of Science and ICT (MSIT) Award Winner

Ranked no. 1 in the SQuAD 2.0 competition

Vision

"QA as a Service"
We aim to position ourselves as a Global QA enterprise provider for various areas through on-premise & PaaS/SaaS platforms

KMS
Customer Service
Chatbot
Connected Car
Smart Watch
Smart Toy
Smart Home
Smart Speaker
Deep QA PaaS/SaaS
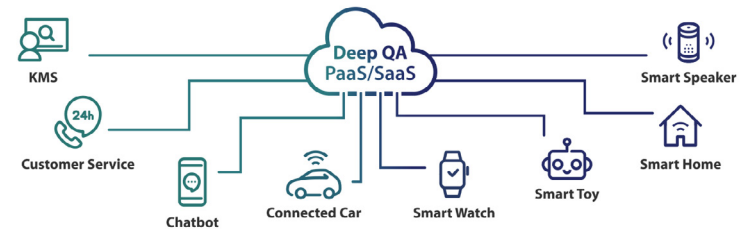
AI, Service Software

03 AgileSoDA

'Everyone's AI'
Our main goal as a machine-learning based software company is to pursue the democratization of AI technology. We provide tools and services that will only accelerate our clients' digital transformation, and AI-driven decision making process followed immediately afterwards. Now, we aim to do this rather in an agile manner, taking every minute detail of our clients' needs into account along the way. Hence the word "Agile" in AgileSoDA.

Not just AI but better yet, self-evolving AI is what we aim for so much so our clients will be able to digest and internalize AI technology after working with us, which we strongly believe, would be of great value to many companies. That's right. We don't just provide some average IT services. We only bring our clients best practices that are so impactful they would feel much more refreshed after consulting with us, just like when we drink a refrigerated soda in a hot summer day. Hence the "SoDA" in the name

Product / Service

▶ **SparklingSoDA : Main portal for seamless integration of AI development and deployment cycle**
  Provides a comprehensive platform and environment for model development, packaging, deployment and monitoring

▶ **AestheticSoDA : Solution for data-cleansing, data-preprocessing and general quality improvement of data.**
  Provides a solution for generating and managing quality-assured data for better AI experience.

▶ **BakingSoDA : AI-based decision making optimization service**
  Provides a service that helps optimize business decision making process through our reinforcement-learning agent

▶ **NakedSoDA: Industry-specific image-recognition/object-detection algorithm service**
  Provides customizable and/or transferable image-recognition models as a service

▶ **NakedCar : Car damaged body-parts recognition and repair estimate calculation service**
  Photo-based Automatic Recognition Service for Car Damage degree

Market Status

▶ Gartner has predicted that until 2022, more than 40% of new application development will be incorporating at least some degree of AI technology, and IDG also has predicted about 75% of IT operations in Asia-Pacific area will be replaced or automated by AI until 2022.

▶ So, enterprise AI market would also be expected to grow as much as 40% of the entire SI market given that the demands in industry for building comprehensive AI-based IT system and the recent paradigm of software 2.0

Service performance reference

▶ Based on numerous successful projects with our customers in financial services sector, including various credit card and insurance companies, we've been recognized as a professional AI startup from our customers and the market.

A Card
"Awards for innovative AI development"
The Best Work Performance Awards 2018s

B GENERAL INSURANCE
"The Best Innovative Work Awards 2018"
"Excellent Project Awards 2018, 3rd place"

C Fire & Marine Insurance
Built an integrated system for AI development, deployment and operation
Selected as an essential educational program for new employees

Vision

▶ We envision to build an AI hub where accumulated data and models gathered from various projects across industry can be shared which would in turn stimulate the growth of AI ecosystem ever bigger.

Field and Tech	CEO	Est	Website
AI	Andrew , Shin	2017. 02	www.aiplatform.co.kr

Email	Contact	Address
ceo@aiplatform.co.kr	051-783-9998	99 e-Class of Centum-dong-ro, Haeundae-gu, Busan

AI
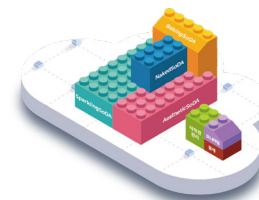
04 AI Platform

Specialized in artificial intelligence and defense services in the medical field

Service

Blockchain Agreement Algorithm-Based Remote Health Care Technology for Artificial Intelligence Individuals (EHR)

Product / Service

▶ Public-based blockchain of medical data from remote collaboration and patients to provide person-alized, artificial intelligence-based health care and share personal & hospital-tube medical data

Market Status

▶ Maintains a high growth rate of 20% or more each year.
▶ Aging-friendly businesses can be applied.
▶ EHR Personal Medical Data Available
▶ Remote medical business can be applied

Service performance reference

▶ venture enterprise certificate
  Defense Venture Certification Company
  Joint Research MOU of Daeyang Electric Industrial Co., Ltd.
  (Note)Increasing MOUs for business cooperation with Iliens
  Busan University Hospital Works Cooperation MOU
  BuKyung University Industry-Academic Cooperation

Vision

AI

05 AI Contents Lab

Smart Contents, and Smarter Life

To build AI System and develop AI Contents

in the age of Super-intelligence

AI Contents?

Structured and unstructured data which are utilized in the building of AI

System and AI learning, such as ML, DL and RL.

Service

Design AI-ethics embedded SMARTERaiSYSTEM

Compose SMARTERaiCONTENTS for AI Agents and Speakers

Provide Digital Humanities Teaching Programs

Product / Service

Collaboration Welcome!

▶ Design AI-ethics Embedded Smarter ai System(SaiS)

- Smart X Life Architectures

  : SmartHome, SmartHealth, SmartShopping, SmartCar, SmartWork, SmartCity etc..

▶ Compose and Test Smarter ai CONtents(SaiCON) for AI agents and Speakers

- Build AI Dialogue System and Knowledge Base(Korean-English)

- Compose and Test Conversational Scenario by Customer Journey and

  Context including Conversation Upgrade

- Develop Multi-dimensional Q & A Conversation System

▶ Humanitas Academy: Teaching Digital Humanities

- Digital Humanities: Human Instincts + IT Technologies

- Smart Transformation(ST) and Smarter Life(SL)

- AI-ethics Embedded Algorithm Development and Application : Technology for Whom?

- Humanities Program in the Age of the 4th Industrial Revolution and Artificial Intelligence.

Market Status

▶ AI Agents and Speakers Needed Contents

-Abroad: Amazon Eco, Apple Siri, Google Home etc

-Domestic: Samsung Bigsby, SK Nugu, KT GiggaaGenie,

  LG ThinQ, Naver Clova, Kakao Mini etc..

B1001, Wings Tower, Jinju Inno City,
  Gyeongnam, Republic of Korea

Field and Tech
Artificial Intelligence

CEO
Jinkyoo Yoo

Est
2016. 11

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AI
06 AITRICS

Consisted of top experts in AI and Healthcare, AITRICS provides optimal medical AI solutions based on its leading-edge machine learning technologies
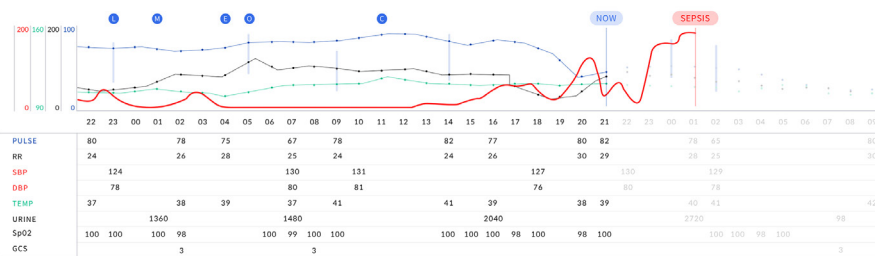
Service

VitalCare

Product / Service

Collaboration Welcome!

▶ VitalCare is an AI-based Predictive Analytics solution in which prediction of adverse events can help with earlier interventions, lower patient mortality and thus improve quality of care

Market Status

▶ Growth in the AI health market is expected to reach $6.6 billion by 2021.
According to researchers, the use of AI will result in 41.9% better outcomes than the usual treatment while reducing the cost by 58.5%.

Service performance reference

▶ Partnership agreement signed with YUHS (Yonsei University Health System)
▶ Development of innovative machine learning techniques acknowledged at top-tier international ML conferences (ICML, NeurIPS, AAAI, etc)

Vision

▶ Clinical trials to be conducted at the hospital setting, in order to ensure safety and effectiveness of the service

Field and Tech	CEO	Est	Website
AI	Jung-Bae Kim	2016. 09	http://www.alcherainc.com

Email	Contact	Address
alchera@alcherainc.com	070-4681-0173	wooam Bldg, 8th FL., 225-15 Pangyoyeok-ro Bundang-gu, seongnamsi, Gyeonggi-do 13494, KOREA

AI

07 ▶ Alchera
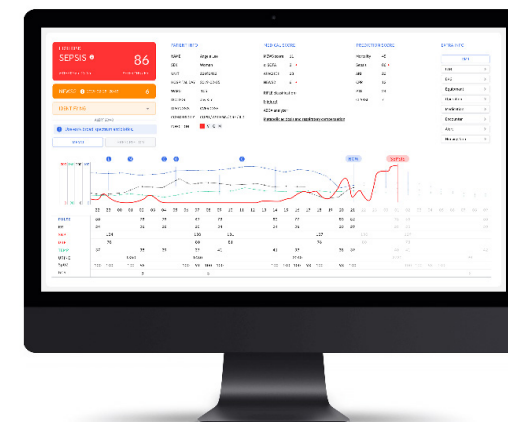
AI based Computer Vision & Augmented Reality Company

Service

Large scale image data gathering & labeling solution for deep learning

AI based image recognition solution

AR solution

Product / Service

▶ DeepSeeQ - smart CCTV security solution

▶ 3D Face AntiSpoofing SDK - 3D camera based spoofing attack prevention solution

▶ Face Recognition SDK- Face verification and identification solution

▶ 3D Hand Analysis SDK – 3D hand joint localization on monocular camera

▶ 3D Face Anaysis SDK - 3D face tracking on monocular camera

▶ TreeD - Large-scale image data gathering & labeling solution for deep learning

Market Status

▶ Market size of AI-based Computer Vision & AR technology is growing to 1.69 times market size every two years

The market will reach $5.49 billion by 2019 from $1.52 billion in 2014 at a CAGR of 29%

(Source: Tractica)
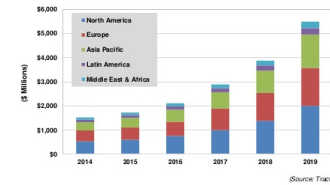
Service performance reference

▶ The partners powered by Alchera are followings:

▶ SNOW Camera (3D Face Tracking & Hand Tracking SDK)

▶ KEPCO & Seongnam City (Smart CCTV Security Solution)

▶ KEPCO (Smart Facility Management Solution)

▶ LGU+ (3D Face & Hand Analysis SDK)

▶ Ranked 18th in FRVT 2018 in NIST, Superior to NEC, Similar level to HIK (1st CCTV company in the world)

Vision

▶ Stepping forward to global market

▶ Expanding biz partnerships such as startups, large companies and etc.

▶ Security solutions, face recognition solutions will be supplied to public corporations and local governments

Field and Tech	CEO	Est	Website
AI	Yim, Hongsoon	2015. 02	www.ibigtree.kr

| Email	Contact	Address
bigbot@ibigtree.kr	02-786-7910	Seoul, Gangnam-gu, Unju-ro 514 10th floor

AI
08 Bigtree

· Provide personalized investment advisory service for financial data analysis and portfolio management so that private investors can invest like professional fund managers
· Passed the examination of the feasibility and safety of the Robo-Advisor by the Financial Services Commission

Service

BIGBOT, Robo-advisor

Product / Service

▶ Automate the whole portfolio management cycle including individual investment propensity analysis, customized portfolio recommendation, asset allocation considering investment risk, smart commodity trading automation, rebalancing according to market conditions
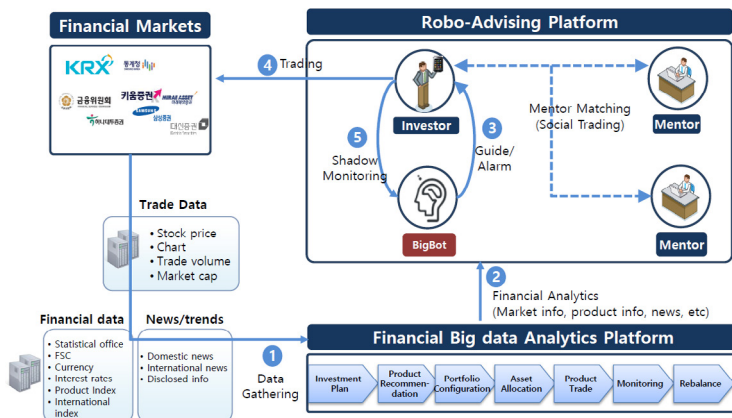
Market Status

▶ The US, where robotic advisors are active, is growing at GAGR 68% and will grow to $ 8 trillion by 2022
▶ The Korea market is expected to reach 1B$ in 2018 and 30B$ in 2025

Service performance reference

2010~2012 Design an Algorithm	2018. 07 삼성헬스토리	Supply contract with Big Data Platform
	2018. 03 KB증권	Store in Robo Advisor Platform
	2017. 12 금융위원회	Passed examination of robot advisor safety
2013 Develop an Analytics Algorithm	2017. 08 TEMPIS	Contracted with Robo Advisor Business
	2017. 06 핀테크지원센터	Selected as the 17th demo day company
	2017. 05 금융위원회	Passed examination of robot advisor feasiblity
	2017. 04 DEX DBR	Marketing agreement
2014 Develop a Prototype	2016. 11 KIBO	Venture Business Certification
	2016. 10 MIRAE ASSET 미래에셋대우	Robo Advisor Business MOU
	2016. 08 미래창조과학부	Institute approved
2015 Establish founding members	2016. 08 하나금융투자	Business MOU
	2016. 07 koscom	Incubating selection and business agreement
	2015. 02 Bigtree	Founded

Vision

▶ ~ 2020: Soft Landing the Korea market, mprovement and diversification of products
▶ ~ 2021: Plan to enter overseas market

AI

09 BluePrintLAB

We provide business solutions utilizing facial recognition and AI technology

Service

V2 Virtual Try On

Product / Service

▶ Analyzes the shape, size, and location of the eyes of the user's face by 3D scanning the face of the user. Then, recommends best fitting eyewear for AR try on experience.
Demo : https://youtu.be/F5ir6iS4Gok

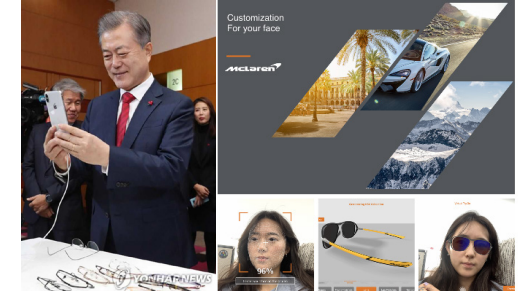Face Scan ➡ Data Analysis ➡ Virtual Fitting

Market Status

▶ In 2016 the Korean glasses market was about 1.7 trillion won while the global market was about 103 billion US dollars. Since the advent of online eyeglass businesses, offline companies have been rapidly moving into the online market.

Service performance reference

▶ We are currently working with L'AMY Group, a French eyewear manufacturer, on a project for custom-fitted 3D printed eyewear with the McLaren supercar brand. We are also working with Blink Eyewear, an offline Korean retailer that also has the online store HotSunglass.

Future Plans

▶ With our experience at home and abroad, we want to expand into the European and American markets to provide a new and improved customer experience for purchasing eyewear online.

Field and Tech	CEO	Est	Website
AI	Sang Gyoon Oh	2012. 03	www.bpuholdings.com

| Email	Contact	Address
helpdesk@bpuholdings.com	02-548-9592	BPU building, 9 Gangnam-Daero 140 Gil, Gangnam-Gu, Seoul, Korea

AI

10 BPU Holdings

BPU Holdings is dedicated to generating the most advanced, usable, secure and innovative Artificial Emotional Intelligence (AEI) technology in the world.
Artificial Intelligence (AI) emulates how people think — AEI emulates how people feel.
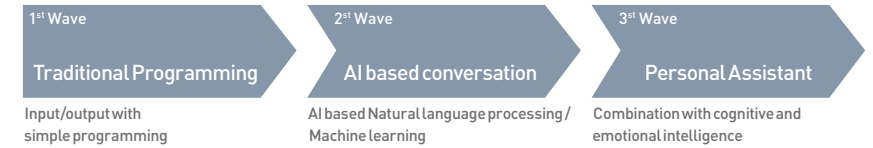
Service

AEI Studio

Product / Service

▶ It is an personal virtual assistant centric development framework that can help developers with interfacing various types of applications which tailored to develop for a specific appor service for a specific vertical industry such as personal healthcare, IoT, etc.

▶ Utilizing various fields combine with emotional computing, natural language process, machine learning and artificial intelligence

The AEI Framework
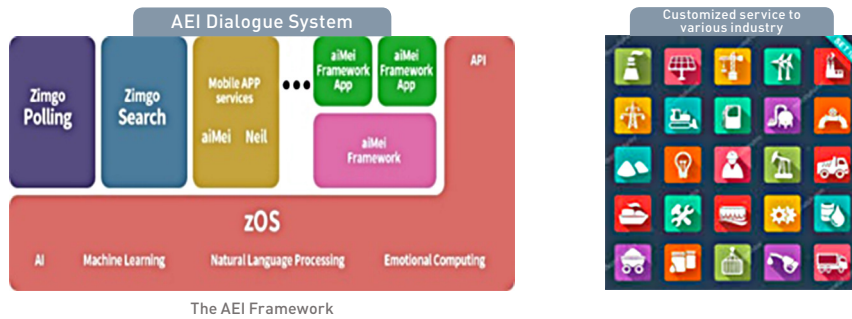
Market Status

▶ Combination of cognitive and emotional intelligence, evolves to 'personal assistant'

[Assistant Evolution stage classification by DARPA]

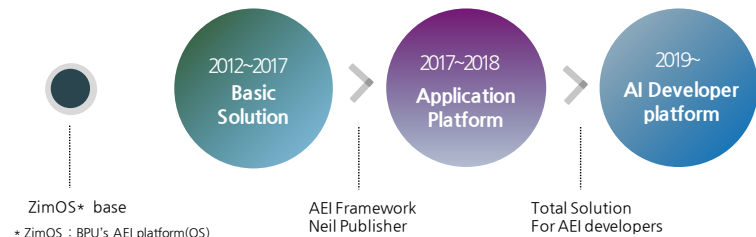| 1st Wave	2st Wave	3st Wave
Traditional Programming	AI based conversation	Personal Assistant
Input/output with simple programming	AI based Natural language processing / Machine learning	Combination with cognitive and emotional intelligence

Service performance reference

▶ Zimgo Polling (AEI based political forecasting platform) forecasted in 2016 US election, 2017 Korean Presidential Election and 2018 Illinois state election

▶ Based on AEI studio, develop medical platform with Arizona University, SEVA and National Science Foundation(NSF)

Future Plans

▶ Evolve to AEI Developer Network from AEI Studio

Based on AEI Studio, it evolves to one-stop kit to provide total solution for AEI developers in various fields including emotional computing, natural language processing(NLP), machine learning(ML) and artificial intelligence(AI) combination

ZimOS* base
* ZimOS : BPU's AEI platform(OS)

2012~2017 Basic Solution	2017~2018 Application Platform	2019~ AI Developer platform
	AEI Framework Neil Publisher	Total Solution For AEI developers

AI, Medical Care

11 ▶ Buzzpole & Co

It is a smart human care company that contributes to the prevention of cervical cancer that is the second most common form of female cancer in the world by ensuring that early examinations of cervical cancer are taken at the right time in areas where medical gaps are high.

Service

A Remote Diadgnosis Solution for Cervical Cancer AI Artificial Intelligence

Product / Service

Be composed of Cervical Cancer A.I. Artificial Intelligence Software 'Cerviclinic A.I.' + Dedicated camera called 'Electronic Colposcope'.

▶ After photographing the cervix with an electronic colposcope, request a reading through the Cerviclinic A.I. The requested picture will generate the first reading through the artificial intelligence server, and then the reading doctor reviews the readings at the remote location and send the final reading.
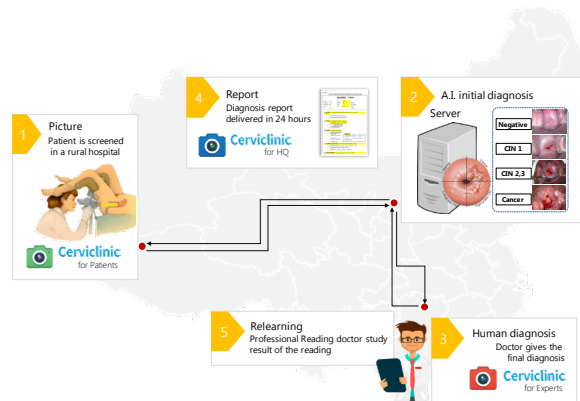
▶ Cerviclinic A.I. conducted a clinical test on actual patients and matched all readings
  - In February 2019, it was conducted by a beauty clinic in Beijing, China, and it was done by the professor of obstetrics and gynecology at The Korea University receiving remote reading support.
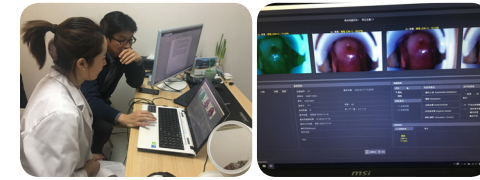
Market Status

▶ There is an early image reading examination of other lesions, but the only program limited to artificial Intelligence reading examination of cervical cancer currently in the commercial stage is Cerviclinic A.I in the world.

Service performance reference

▶ Founding a Chinese Joint Venture
▶ Final Selection of Korea and Canada International Collaborative Research Projects to Enhance Artificial Intelligence Service – Quantum Computer-Based AI Technology Alliance
▶ Alliance of the Beijing Area Clinic Center

Future Plans

▶ Advance pre-predictable artificial intelligence solutions with expert clinical data Currently developing stroke prediction solution as reference for cervical cancer artificial intelligence examination

Field and Tech
Artificial Intelligent

CEO
Jin Yeon Jung

Est
2016. 03

Website
https://csidelab.com

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Contact
02-338-9395

Address
39 Seongsanro 31-gil, Seodaemoon-gu, Seoul

AI

12 C.SIDE KOREA

C.SIDE LAB, an artificial intelligence company has AI technologies such as Speech Recognition, Natural Language Processing, and Blockchain Security Solution based on Deep Learning technology through constant Korea-Japan joint research. It provides smart technologies that can grow together from the introduction to operation of the optimized AI technology in various industries.
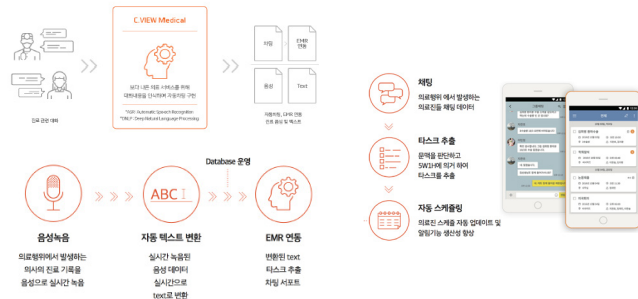
Service

C.VIEW-Medical

Product / Service

▶ **1-1 AI Speech to Chart Solution**

This is a supporting solution of saving patient record occurred during the medical care via STT (Speech to Text) process to prevent medical disputes and protect the rights of medical staff and patients. (Speech Recognition, Natural Language Processing, Automatic Scheduling)

▶ **1-2 AI Task Management Solution**

It is a solution for reducing work cost and activating communication of teamwork by medical scheduling service (implement an instant messenger for business) due to the task management using AI software, C.VIEW
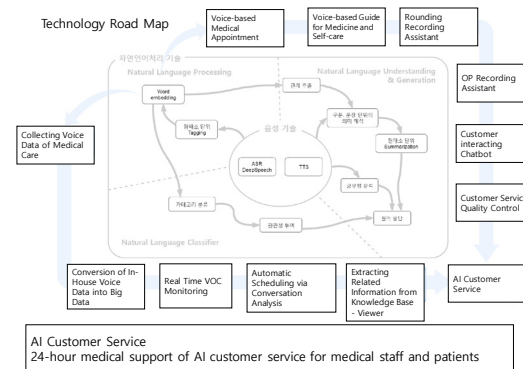

Market Status

▶ A doctor in a general hospital treats an average of 150 to 200 patients per day. Poor medical condition, Frequent medical disputes and accidents

Service performance reference

▶ Showcase at NVIDIA's GPU Technology Conference (GTC)

▶ SoftBank Company optimized service (in personnel, general affairs, system) with Big Data Real time Marketing

▶ Lotte R&D (AI in Recruiting, AI in Retail)

▶ Establishing AI Customer Service at a Korean Home Shopping company

▶ Developing a Blockchain Platform with Underpin and Facebook collaboration

▶ Launching C.VIEW Medical

▶ Launching C.VIEW Insight

Future Plans

▶ Expansion of AI managing service for one to one of medical staff and patient

Technology Road Map

AI Customer Service
24-hour medical support of AI customer service for medical staff and patients

Field and Tech	CEO	Est	Website
Artificial Creativity	Pak Sung Youn	2011. 01	www.ideapingpong.com

| Email	Contact	Address	
crevate@crevate.com	02-6403-6482	Seoulsupgil 17, Seongdong-gu, Seoul Korea	

Artificial Creativity

13 Crevate Partners

Create is an innovative consulting firm that delivers new and innovative products, services, UX, space and business model concepts. We have expertise in creating new ideas, and we are challenging artificial creativity based on our methodologies.

Service

Idea Ping Pong is an artificial creativity chatbot tool. It suggests new ideas based on innovative cases. It's the best way to raise your creativity.

Product / Service

▶ IdeaPingPong automatically generates new ideas based on innovation cases when you enter keywords. Artificial intelligence generates ideas, so you can meet new ideas in various ways without bias. AI suggest new ideas, I can continue to expand my thoughts. Chatting is a natural and simple conversation. Brain fitness chatbot IdeaPingPong Just as daily exercise is important for a strong body, brain fitness is important for everyday creativity.
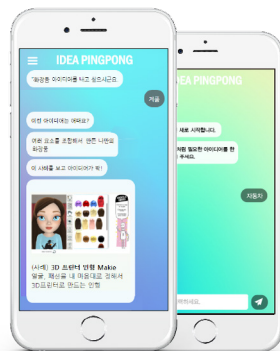
Market Status

▶ Artificial intelligence composing, paintings, poetry, artificial creativity fields are getting bigger and bigger. Idea Ping Pong is pioneering a new field making new ideas using artificial intelligence technology. This will help humans develop and implement more creative and innovative ideas based on seed ideas provided by artificial intelligence.
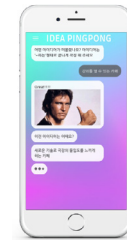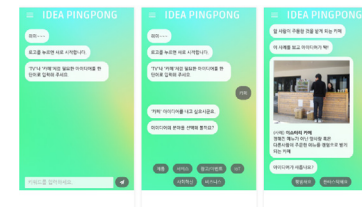
Service performance reference

▶ Many schools and corporations are using IdeaOpener and IdeaPingPong. IdeaOpener(www.ideaopener.com) let them learn concrete and creative ways of thinking and IdeaPingPong helps to make it easy to come up with new ideas based on innovative cases. It's the best way of training to create ideas.

Future Plans

▶ Crevate will increase the number of consumer touchpoints. The consumer can access IdeaPingPong using AI speaks. Especially Chatbots are appropriate for speaker-based Voice UI. In addition, we will make a new market, we called Brain Fitness. Idea Opener and Idea PingPong will be the best tools to be the creative human being.

Field and Tech	CEO	Est	Website
Deep Learning, NLP, Corpus	Anson Park	2017. 04	www.deepnatural.ai

Email	Contact	Address
support@deepnatural.ai	02-6952-0588	#602, 114, Taebong-ro, Seocho-gu, Seoul, Republic of Korea

AI

DeepNatural

14

DeepNatural AI provides high-quality corpus to train and evaluate your natural language models.

Service

DeepNatural AI

AI Assisted Micro-Task Crowdsourcing Platform for HQ Corpus

Product / Service

▶ High quality training corpus is essential for conversational AI, and it requires a lot of worker's manual labor.

DeepNatural AI improves quality and efficiency with "Human + AI Collaboration for AI"

processes where people and AI collaboratively generate training data.

Market Status

▶ Artificial Intelligence software market is going to reach $105.8 B in annual worldwide revenue by 2025, and training data market will take about 10~15%.

Service performance reference

▶ NAVER LABS Corp., Apr - Oct 2018

▶ Vinetech, June - Nov 2018

▶ Acryl, Nov 2018 – Jan 2019

▶ A Company, Emotional Response Dialog Corpus, Feb 2019 -

▶ B Company, Topic Identification Dialog Corpus, Mar 2019 -

Future Plans

▶ July 2019, Opening DeepNatural AI Platform Beta

▶ Mar 2020, Expanding to Asian Languages

▶ Apr 2021, Expanding to Global 18+ Languages

Field and Tech	CEO	Est	Website
AI/Chatbot	Namhyun Kim	2014. 11	www.elgen.co.kr

Email	Contact	Address
elgen@elgen.co.kr	070-8789-2035	324, Yeongdong-daero, Gangnam-gu, Seoul, Republic of Korea

AI/Chatbot

15 Elgen ICT

· 'Beyond knowledge, in wisdom'
· The incorporation of AI ChatBot, STT/TTS, Intelligent Search Engine, TA analysis, Intelligent System SI, SM and Consulting puts Elgen ICT well ahead of the industry.

Service

Intelligent Chatbot consulting system and intelligent search engine

Product / Service

WIX-MIND : Elgen AI Platform

▶ I-CHAT : Elgent Chatbot Solution is based on AI. It handles the consultation

with the customer and directs the service on the online.

By providing Simple consultation, Scenario-based consultation, we make customer's satisfaction.

▶ I-VOICE : TTS / STT technology and TA (text analysis) to analyze and predict dialogue and provide

intelligent services such as conversation processing and automated consultation

(I-CHAT)

(I-VOICE)

Market Status

▶ Currently, most of the services are at the level of 1 and 2, but as the artificial intelligence technology matures in the few years, the chatbot service will become a more intelligent and emotional secretary, enabling more specialized and personalized services.

▶ According to market research specialists TechBio, Global Chatbot size is expected to exceed USD 3.17 billion.

▶ According to Hungkuk Securities reports, Global Chatbot will be from 0.15 millions in 2017 to 24.3 millions in 2022.

Service performance reference

▶ Public Service
- 2014, Deagu Civil complaint integration service ISP "Dodoriso"
- 2015, Busan Civil complaint integration service "Busan Minwon 120"
- 2016, Intelligent Consultant System "DDubot"
- 2016, Chungcheongnam-do Civil complaint integration service ISP "아름이"
- 2017, Ministry of Government Administration and Home Affairs "Job Notification Chatbot"
- 2018, South-east Power Voice AI Information system

▶ Private Sevice
- 2017, Webtour AI Chatbot Service
- 2018, CJ Telenix Chatbot&KMS "HR TALK"
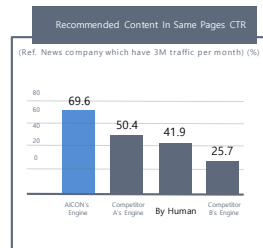- 2018, Lotte Cinema Tablet App Voice recognition AI Chatbot

Future Plans

Field and Tech
AI

CEO
Jung Hoon Shin

Est
2012. 01

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ceo@hnscom.com

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SKE1 801 (SKV1 Knowledge Industry Center, 41 Tongsan Road, Yeongdeungpo-gu, Seoul)

AI
HNS Communication

16.

Best Content Platform preferred by content experts !
HNS has been strengthening the competitiveness by using its own technology
and promoting our aggressive partnerships to enter overseas advertising markets.

Product / Service

AICON is Content Discovery Solutions
that growing up Website Traffic and Advertising Revenue
by personalized content using AI and advertising
in the area around the pages of media articles

Recommended Content In Same Pages CTR

(Ref. News company which have 3M traffic per month) (%)

80
60
40
20
0

69.6
50.4
41.9
25.7

AICON's Engine | Competitor A's Engine | By Human | Competitor B's Engine

아이콘 **인공지능** 뉴스

Market Status

▶ NATIVE ADVERTISING IS ON THE RISE

  - Global investments in native advertising will reach $85.5b in 2020, a +213% growth from 2016

  - native short form video, which currently accounts for 56% of video ad spend,
    is expected to double in the next year.

  - The BI Intelligence Digital Media Ad Spend Report predicts that mobile will be
    the fastest-growing ad channel by 2020, rising by an estimated 26.5% CAGR in the next two years.

Service performance reference

▶ HNS is A rapidly growing company which exposes more than 100 million
view ads per day by establishing a community partnership with over 200 Press agencies.

2019 Annual sales
Expected to be $ 15 billion.

2017 Annual sales
$ 10 billion

2015 Annual sales
$ 8 billion.

2014 Annual sales
$ 3 billion.
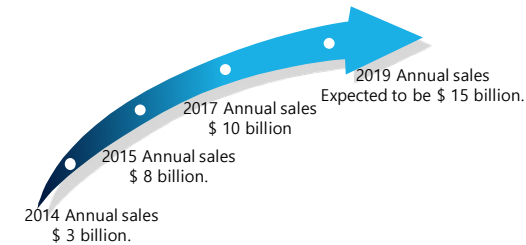
Future Plans

▶ We intend to continue our focus on product development
We intend to continue to focus on research and development and product development to
ensure that our products meet the evolving and stringent requirements of the
contents discovery ads Industry. We also intend to develop new short video content that
is expected to increase in the future

▶ We intend to make reporting system that automatically analyzes and displays monthly
advertising performance to enhance our customers' quality control procedures,

▶ We intend to enhance our value-added services
We intend to maintain our long-standing relationship with our customers
by providing more value-added services such as technical support and responsive after-sales
services. For instance, we plan to provide a simple manual to make it
easier for publishers to see and apply our ads.

AI

17 InSpace

InSpace conduct system development using satellite images and develop object detection, classification algorithm, and apply it in practice by applying artificial intelligence technology to satellite and drone images.

Service

Deep learning-based Image processing technology, Satellite ground station system

Product / Service

▶ Dron image based spatial information matching / target analysis platform (InTraker)
- Mapping GPS information and reference geographic information of drone images.
- AI-based tracking of targets of interest and real-time spatial information extraction
- Automatically tracks user-selected objects of interest and deployment of deep learning data sets
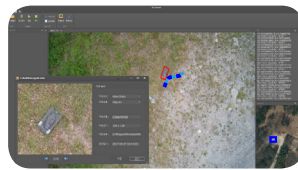
▶ Solar side magnetic field image restoration technology
- AI-based sunspot explosion and prediction point analysis
- AI-based solar side magnetic field images can be obtained
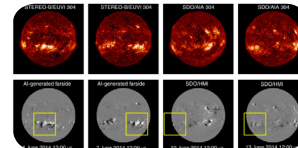
▶ Object detection technology based on AI-based high speed parallel distribution processing
- Object Detection Using Multi-object AI Model in Large-Scale Satellite Image
- High-speed object detection with parallel distributed processing technology

business field
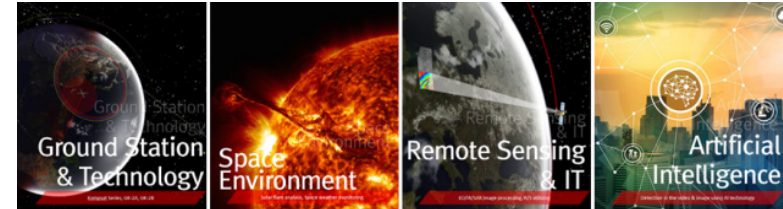
Service performance reference

▶ Status of Technology Retention
- AI-based solar side magnetic field image restoration technology (Nature astronomy published)
- Development of deep learning labeling tools, possession of image processing technology
- Having a server room dedicated to deep learning development
- Having a deep learning dataset establishment room
- Holding the 1st Deep Learning Conference in 2018

▶ Project Performance
- Development of deep learning-based control algorithm verification simulator for ZTEC (2018)
- Development of machine learning-based satellite state anomaly detection tool prototype (2018)
- Development of a drone image-based object detection engine (2018)
- Verification of the possibility of automatic extraction of land use status using machine learning / deep learning (2018)
- Survey of agricultural area using remote exploration (2017)
- Development of sputum smear automatic inspection system based on computer vision (2018)
- Development of Real-time Spatial Information Mapping and Target Analysis Platform based on Drones Image (2017)
- Research on the analysis and prediction of sunspot explosions (2018)

Future Plans

▶ Development of high-availability products through active adoption of technology and advanced technology
▶ Applying the process of creating deep learning datasets, conducting new research and development
▶ InSpace is planning to open new high-value-added services by combining artificial intelligence technology with with satellite image, space environment and remote sensing.
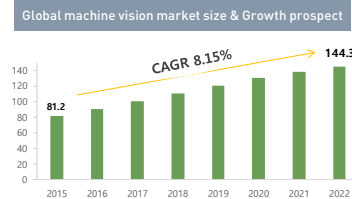
AI

18 Laon People

LAON PEOPLE specialize in deep learning vision inspection solution, and
believe our leading-adge technologies can make the world happier.
We provide deep learning vision inspection solution, machine vision camera,
barcode reader and camera module inspection solution by our own R&D capacity.
We satisfy our world leading customers by outstanding technologies and best quality .
The 151-megapixel ultra-high-resolution camera launched in 2018 and the barcode reader
with Auto Tune function are in the spotlight. In recent years, LAON PEOPLE has expanded
deep learning network to the life-friendly field such as the traffic solution.

Market Status

Global machine vision market size & Growth prospect

CAGR 8.15% 81.2 → 144.3
(2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022)

▶ **Global machine vision market**
It is growing with artificial intelligence software rather than hardware.

▶ **Korea AI market**
Artificial intelligence software is becoming an essential technology of Smart Factory

Global AI market size & Growth prospect

CAGR 52% 13.8, 24.2, 40.7, 66.3, 105.3, 162.4, 241.2, 343.8, 465.2, 59.8
(2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025)

Korea AI market size & Growth prospect

CAGR 19.7% 5.4 → 11.1
(2016, 2017, 2018, 2019, 2020)

Product / Service

AI Vison Inspection solution

Over the wall of vision inspection
AI Vision Inspection Solution, NAVI AI

Difficult problems with PCB/DISPLAY/X-RAY,
LAON PEOPLE's package solution can solve!

AI Package Inspection Solution

NAVI AI MARS
Practical Uses
Atypical defect inspection
Perceived quality inspection
Applications
Various externals inspection

NAVI AI Mercury
Practical Uses
High speed quality,
defective judgement
Applications
Defect classification
Judgement mixed defects

NAVI AI Venus
Practical Uses
Pattern Matching,
Object localization & detection
Read out quantity of object
Applications
Goods detection
Read out security X-ray

NAVI AI OCR
Practical Uses
Read out
Difficult optical character
Applications
Read out PCB OCR
packaging material OCR

AIPi Artificial Intelligence PCB Inspection
AI PCB Inspection Solution
○ Compared with visual Inspection,
99% Accuracy, 40 times faster inspection speed
Reduce cost 75% , 365 days of same level of quality
○ Can detect any type of PCB defect cases

AIDi Artificial Intelligence DISPLAY Inspection
AI Display Inspection Solution
○ Detect Mura & Demura all at once!
○ Detect Sub-Pixel defect with any panel type & pixel structure
○ Generate defect samples through Mura Generator infinitely

AIXi Artificial Intelligence X-ray Inspection
AI X-ray Inspection Solution
○ Real-time detection of violations within 0.1 second
○ No replacement of existing X-ray device, can connect with Ethernet
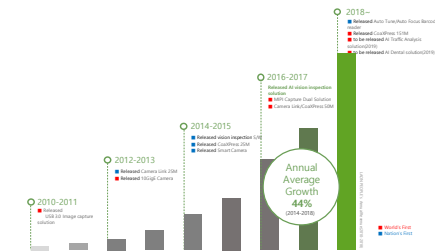
Service performance reference

2018~
Released Auto Tune/Auto Focus Barcode
Released CoaXPress 151M
to be released AI Traffic Analysis solution(2019)
to be released AI Dental solution(2019)

2016-2017
Released AI vision inspection solution
MIPI Capture Dual Solution
Camera Link/CoaXPress 50M

2014-2015
Released Camera Link 20M
Released 16GigE Camera

2012-2013
Released vision inspector 1/8
Released CoaXPress 25M
Released Smart Camera

2010-2011
Released USB 3.0 image capture solution

Annual Average Growth 44% (2014-2018)

World's First
Nation's First

Future Plans

▶ **Market expansion**
Applying AI application to various fields(ADAMS / AI traffic solution / AI medical solution),
Beyond the existing Chinese market, seek market expansion to Europe and America.

▶ **Diversification of business**
Beyond the industrial field and into the non-industrial field

AI

19 LOTTE Data Communication

LOTTE Data Communication is an IT service company leading digital transformation innovation of entire industry such as retail, logistics, chemical, etc. We offer various services based on core technology of 4th industrial revolution (e.g. AI, IoT, Bigdata, Cloud, etc.)

Service

Enterprise AI Real-Time Video Recognition Solution "araView"

Product / Service

Face Recognition	Face authentication Face ID tracking Gender/age estimation Facial recognition	
Object Recognition	Store product recognition Display product analysis Product recognition payment	
Gesture Recognition	Sight recognition product analysis Pickering recognition product analysis Customer movement analysis	

Introduction of LOTTE Data Communication AI Tech. Center lab

▶ Vision lab : Innovate in retail and logistics through image recognition
(araView : Real-Time Video Recognition Solution)

▶ Infra lab : Build infrastructure to commercialize AI technologies in a timely manner
(araCatch : AI, Bigdata Service Platform)

▶ Signal lab : Improve call center work flow and enhance robot UX by speech recognition
and text analysis

▶ Automation lab : Control robot and drone, implement automatic driving
(Drone Control Platform in development)

Future Plans

▶ Plan to expand application to various industry with partnerships

Pro-duction	➡	Storage	➡	Logistics	➡	Retail	➡	Sale

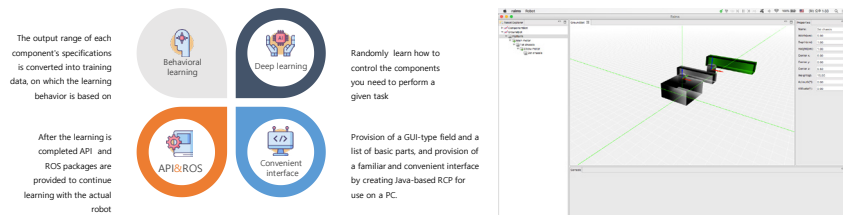| Smart Factory	Smart Logistics	Smart Retail
· Product inspection · Work environment safety management	· Box barcode classification · Understanding box location information on a conveyer belt	· Store simulation · Store user response analysis · Intelligent vending machine · Smart self-payment · Intelligent park control

AI / Robotics

20 ▶ MACROACT

a company that develops a learning platform that allows the robot to learn how to control its own components in the most efficient way.

A Experiential Version — Robot learning? Let's experience what it is

B Personal Version — I, too, would like to develop a robot as a hobby

C Enterprise Version — Let's introduce artificial intelligent robot development system to our company

Service

Robot Motion Control Learning Platform(Raims – Robot AI Motion Simulator).

▶ In order to control the movement of the robot according to a predetermined purpose, the process of assigning the appropriate formula and numerical value and measuring the result is repeated many times. This causes wear of the main parts and power consumption and moreover it is also possible due to erroneous input values to discard the parts.

▶ But most of all, the biggest loss is the time required for this process. If the software, not the hardware, can learn and optimize the robots' behavior and monitor the process, the costs including the development period can be greatly reduced

▶ First the robot learns about the possibilities of the components of which he is made of and second he learns how to carry out tasks. Developers are provided with log and graphical information to monitor this process.

The output range of each component's specifications is converted into training data, on which the learning behavior is based on

Behavioral learning

Deep learning

Randomly learn how to control the components you need to perform a given task

After the learning is completed API and ROS packages are provided to continue learning with the actual robot

API&ROS

Convenient interface

Provision of a GUI-type field and a list of basic parts, and provision of a familiar and convenient interface by creating Java-based RCP for use on a PC.

'Robot Learning' operates in a private state within a cloud server. The customer is provided with a separate screen to monitor various cloud computing environments and learning processes.
We classify them as "Experiential Version", "Personal Version", and "Enterprise Version", each with limited computing resources and charges based on usage
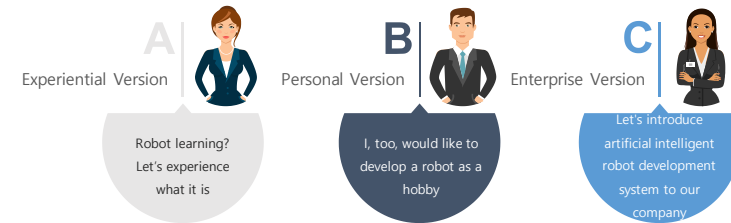
Market Status

▶ The International Robot Federation (IFR) announced in 2017 that the world market for industrial robots will reach $ 16.2 billion and according to Market and Markets it will reach $ 71.7 billion by 2023. Recently, with the spread of microcomputers such as Arduino and Raspberry Pi, Robots developed by individuals are also showing a large increase.

▶ The fastest and most accurate artificial intelligence platform that meets the needs of robots as diverse as their size is needed

Worldwide annual supply of industrial robots 2001 - 2019*
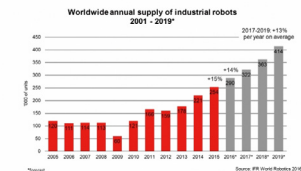
Service performance reference

▶ Verification of feasibility of platform service that learns the whole operation by definition of parts constituting the robot and patent registration of related technology

Future Plans

▶ December 2019 demonstration and launch of simulator and trial version. March 2020 Launch of enterprise and personal-version services.

Raims

Field and Tech	CEO	Est	Website
Blockchain	Allen Kho, Eunsol Lee	2017. 04	medibloc.org

Email	Contact	Address
partner@medibloc.org	02-6053-9119	14, Teheran-ro 26-gil, Gangnam-gu, Seoul

Blockchain/Healthcare

21 ▶ MediBloc

MediBloc is a technology innovator that uses blockchain technology to enhance security through efficiently distributing health data in a patient centric way and to heighten the utilization value of health data through personal identification and integrity validation.

Service

Patient-centric health data platform

▶ **Digital Health data Wallet**
The wallet enables individuals to view their full health data in one place and to utilize the data when needed. With their data in their hands, users can skip the same checkup when visiting a new hospital, enjoy personalized consultation, and easily make insurance claims.

▶ **PHR-based chronic disease care services**
Provides personalized care service for chronic disease such as diabetes, hypertension using data such as blood sugar level, blood pressure, collected through IoT devices

▶ **Produce standardized data optimized for collection and utilization**
We heighten the value of data through standardization that is optimized for utilization and lower the cost for data conversion. As a result, researchers can more easily acquire data in need.
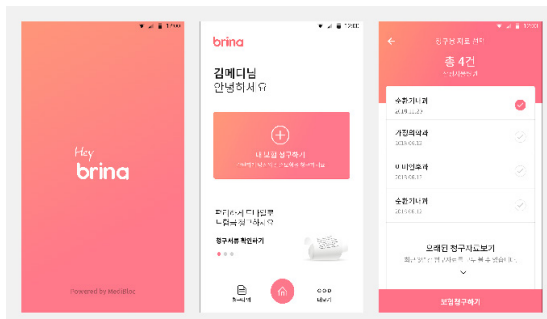
Market Overview

▶ In 2020, Global Smart Healthcare market is expected to reach 101.5 billion US dollars, an 4.8 times of the market size in 2014.

▶ In late 2018, FDA has announces its plan to utilize RWE, which could be acquired through RWD, in new drug development process and the importance of health data is ever growing.

Track Record

▶ 2018.04 Registered as Venture company (Registration number : 20180104697/ evaluation agency: Korea Technology Finance Corporation)

▶ 2018.07 Selected as Contract Technology Organizations for Government Task by National Information Society Agency(NIA)

▶ 2018.09 Participated as blockchain provider for Health Big Data Center Establishment project(the project was selected as a government task)

▶ 2018.11 Join research with Massachusetts General Hospital under Harvard Medical School

Future Plans

▶ Expand partnerships with various medical institutions and healthcare service providers and establish APAC's biggest health data ecosystem

▶ Launch Health Data Platform optimized for generation/collection/utilization of RWD

▶ Provide premium healthcare service based on the latest AI technology

Field and Tech
AI

CEO
SangJoon Park

Est
2015.09

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7F Yulgok-ro, Jongno-gu, Seoul, Republic of Korea
R&D : SNUH Cancer Center Rm 806~809, 101 Daehak-ro, Jongno-gu, Seoul, Republic of Korea
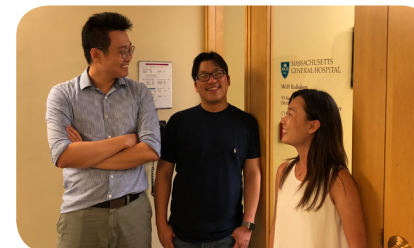
AI
22 Medical IP

Medical AI (Artificial Intelligence) 3D modeling company based on high-performance
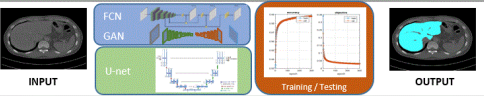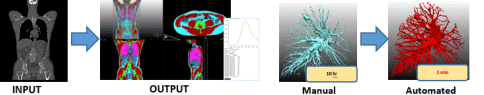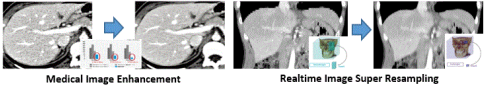3D image technology

Service

3D modeling software 'MEDIP'

Product / Service

MEDIP

▶ The two−dimensional image information obtained from CT or MRI machines is converted into a three−dimensional anatomical model, facilitating accurate understanding of tumor size and location.

▪ Top Level Software Implementing World Class Deep Learning AI Technology

Market Status

▶ Personalized medical products are in high demand; market size is increasing dramatically.
- On 2017.11.29, The Gartner Group predicted that by the year 2021, 25% of all surgical doctors will utilize presurgical 3D simulation models in some form before entering the operating room.
- The domestic need for our company's products is high; they are frequently used in clinical research. There is a lot of interest among doctors from various departments

Service performance reference

▶ Medical IP is listed in the Gartner 'Hype Cycle' as a baseline company for ' 3D printed surgical simulation models' Companies listed in the Gartner 'Hype Cycle' carry intrinsic benchmarking value in assessing the status of international 3D printing technology.

▶ Medical IP is the sole 3D printing company in Asia that participates in the American Society for Testing and

▶ Materials (ASTM) and the Stanford Medical 3D Printing Conference.

▶ MEDIP is listed in the Medical 3D Printing GMP Guideline put together by the MFDS. Replaced MIMICS in over 90% of the guideline categories.

Future Plans

▶ Strengthen academic co-operation within the US and increase foreign exhibition presence.
▶ Provide patient specific organ modeling services to the Xian International Hospital Center in China using MEDIP SW combined with 3D Printing/ Virtual Reality/ Artificial Intelligence technology.
▶ Expand the big data platform business that is based on 3D image data science.
▶ In addition to our Silicon Valley and Singapore regional offices, we plan to expand our global operations by establishing an office in China.
▶ Launch our IPO in the KOSDAQ exchange market within 2 years(2021).

Field and Tech
AI

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2018. 06

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AI
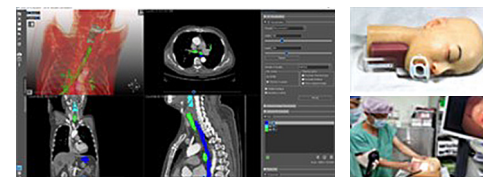
23 ▸ MEDIRITA

MEDIRITA Inc. is an artificial intelligence company founded in 2018. Its artificial intelligence technology provides a fast, low-cost solution for the development of new drugs that can treat a variety of diseases, including rare diseases.
We aim to contribute to the healthy life and happiness of human by growing as a global artificial intelligence hub of the pharmaceutical industry for the development of new drugs

Service

Multi-OMICS Network A.I.(MuN-AI)

Product / Service

MEDIP

▶ We developed network analysis index based on network medicine theory. This analytical indicator defines nodes and edges for network configuration to enable computer simulation of the drug response path. It extracts the data required for knowledge network construction from the global public OMICS databases, changes it according to the standard, and builds it as a network database. It learns data based on information search and data refinement technology, and helps to predict drug efficacy and safety of new drug.
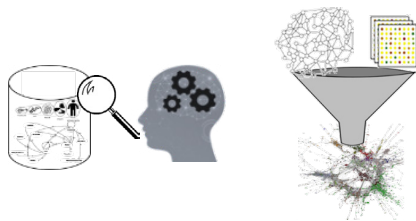
Market Status

▶ In the pharmaceutical industry, new paradigm for drug development is urgently required due to a long period of over 15 years, a high development cost of 3 billion $, and a low success rate. Investment and collaboration in artificial intelligence start-ups are rapidly increasing in the field of drug development including global big-pharma. However, artificial intelligence technology for new drug development that reflects human structural complexity has not yet appeared on the market.

Service performance reference

▶ In order to develop new drugs with high success rate, it is necessary to reflect the complexity of the human body and the relationship of each stage of development. For this purpose, we are developing a new paradigm of drug development called 'artificial intelligence technology based on network medicine theory'. It builds a network knowledge database from global public multi-OMICS data and implements a pipeline to find new drug application.

Future Plans

▶ We plan to contribute to the development of open innovation ecosystem for drug development to utilize, and collaborate with pharmaceutical bio companies to verify and develop A.I. technology.

AI
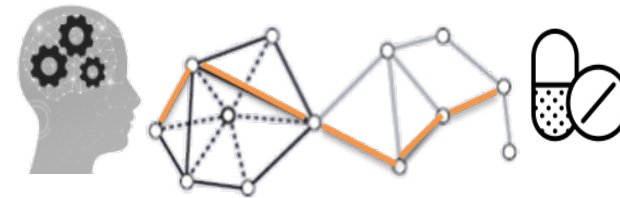
24 Mindslab

MINDsLab is a professional AI company (AI as a Service Firm) that provides various AI service engines from Natural Language Processing to language, visual and cognitive intelligence.

Service

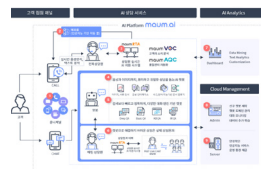### AI Service Platform – maum.ai

Product / Service

Make Your Own AI Service, Maum ai (maum.ai)

▶ maum.ai opened AI services such as AI Voice generation, voice recognition, video/image recognition, and machine reading comprehension(MRC) so anyone could apply these services for business of any sizes.

AI Customer Contact Center (FAST AI contact Center)

▶ FAST AI analyzes voice of customers. It supports agent by automatizing the repetitive task calls using Voice Bot and Chatbot technology.

AI Smart Factory (maum MAAL)

▶ By combining deep learning algorithms and IoT, AI Smart Factory optimizes the manufacturing process and minimizes the production cost

AI English Education (mAI English)

▶ With MINDsLab's voice recognition, text analysis, and AI conversation technology, mAI English evaluates the accuracy and fluency of the user's spoken English

Market Status

▶ In financial industry, there is a rapid demand of AI services such as AI Voice Bot and Chatbot for customer contact center. For manufacturing industry, AI Smart Factory is in high demand.

▶ Education industry is counting AI for its innovation of instructional method.

▶ Starting with the leading AI company, deep learning AI algorithm advanced rapidly. The expected growth of the global AI market is $34 billion for 2019 and $53 billion for 2020.

Service performance reference

▶ An authorized agent business by Financial Services Commission (2019.3) Referenced by KEB Hana Bank HAI Banking, Posco AI Smart Factory, Hyundai Insurance AI Voice Vot, Samsung Books AI English 'Ms. Selena,' Daegu Metropolitan City `Ddubot`.

▶ Managing business offices in United States, Canada, Philippines and secured export performance.

▶ Recognized for 2017 FORBES ASIA 10 South Korean Startups Breaking Out, 2018 Prime minister Award, ImpaCT-ech, Mister Award, Ministry of Trade, Industry and Energy, and Prime Minister Pruze 3 years in a row.

Future Plans

▶ We plan to contribute to the development of open innovation ecosystem for drug development to utilize, and collaborate with pharmaceutical bio companies to verify and develop A.I. technology.
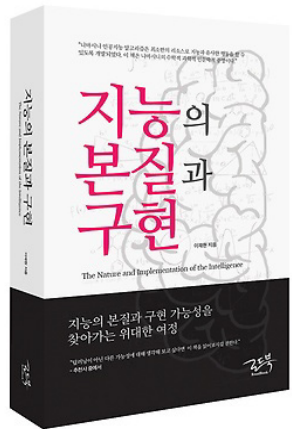
AI

25 Mnemosyne Solutions

Design and development of machine learning algorithm 'Mnemosyne Algorithm'
Providing computer solutions

Service

Mnemosyne Algorithm Research and Development

Product / Service

▶ Design and development of machine learning algorithm 'Mnemosyne Algorithm'

- 'We published a book on the theoretical proofs
  of the Mnemosyne Algorithm' This book was
  selected as an excellent book by the Korean
  government in 2018.

Market Status

▶ Computing power, algorithms, and data are needed to implement artificial intelligence.
 IT multinational corporations have taken the lead in algorithms. Korea has lower level of
 algorithm technology than the United States and China. Few companies are studying
 artificial intelligence algorithms in Korea. So MNEMOSYNE SOLUTIONS is a competitive company.

Service performance reference

▶ Design and development of machine learning algorithm 'Mnemosyne Algorithm'

▶ 'Mnemosyne Algorithm' book selected as the best government book by the Korean government

▶ Project with Seoul National University Boramae Hospital

Future Plans

▶ We will analyze the psychology with Seoul National University Boramae Hospital and
 implement artificial intelligence.

AI

26 MOBILTECH

MOBILTECH is a GIS start-up based on computer vision technology

Product / Service

▶ 1. MOBILTECH Replica System (XL-Replica / L-Replica)
   A.I. based geological information extraction for the use of market as like autonomous vehicle, VR

High definition Mobile Mapping System XL-Replica

XL-Replica

Scanned data example

▶ Precise road environment scan & modeling with Interconnected High definition GPS,
   LiDAR, Camera (3cm level)
▶ 70% price advantage than other products with rival products by in-house development

Compact 3D Scanning Solution L-Replica

L-Replica

Scanned data example
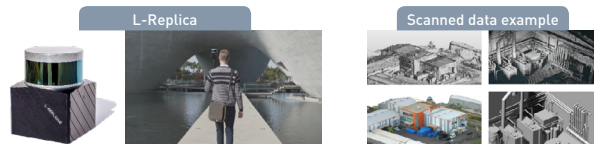
▶ Environment scan & modeling only with LiDAR (without GPS)
▶ Since its born, 2017, its performance has been proved by various cases in various domains :
   Nature environment survey, factory scan and plan drawing, 3D effect base modeling, indoor robot control, etc..

A.I. based HD Map drawing software

Automatic drawing of traffic lane and crossroad

Road sign recognition, objectification
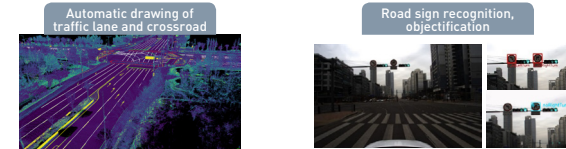
▶ Automatically draw road factors like traffic lane and crossroad, to make HD Map.
▶ software launching to Korean Geographical Information center is under discussion

Market Status

▶ Recently, companies such as Google and GM have been accelerating the market expansion
   by increasing their level of perfection.
▶ As of 2031 the global self-driving car market is growing to about 10 million units
▶ Self-driving is introduced mainly in areas such as shared taxis, shuttle and freight transport,
   and is expected to grow more than 10 times by 2025.
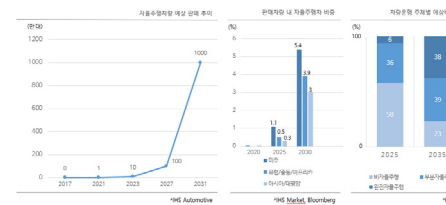
Future Plans

▶ In the short term, MOBILTECH will deliver a sensor convergence technology in the form of
   hardware to self-driving platform. Its technological development is complete,
   and product is in the testing process.
▶ In the long term, using precision positioning and recognition technology, a key technology of
   self-driving, an integrated recognition system is being developed. It provides peripheral
   information for self-driving cars to understand their surroundings and operate.

AI

27 ► Mr.MIND

Mr.Mind is an artificial intelligence company that creates value in the world through AI technology

Service

AI capsule (Toybot Platform Service)

Product / Service

► In addition, we can offer a variety of IO Extensions to provide features and services that allow us to interact with our children. Currently, the service will be provided on the talking robot fish (AIRO) and the talking bag (Tababa).

Market Status

► According to market research firm Euromonitor, the global smart toy market has nearly doubled from 4.94 trillion won in 16 to 9.24 trillion won in 18 years.

► The domestic market is still in its infancy, but it is expected to grow rapidly as the movement to combine IoT with artificial intelligence is expanded.

Service performance reference

► Currently, we have an early smart toy called Porlot with our AI technology. We have experience in releasing character robots. Based on 500,000 infant firing data obtained through Porlot service, we are building a conversation scenario and conversation model specifically for infant.

Future Plans

► Through in-depth research on infant ignition, we are upgrading our conversation engine SW development, which allows users to enjoy time with their children. When the development of SmartToy AI capsule HW is completed, SW and HW will be released as products that are applied to characters at low cost

Artificial Intelligence Capsule

우리 아이의 애착인형이 우리 아이와 대화를 한다면, 우리 아이가 얼마나 행복할까요?

미스터마인드

Field and Tech	CEO	Est	Website
On-Device AI	HeeKyung Jin	2015.07	www.nalbi.ai

Email	Contact	Address
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AI

28 ▶ Nalbi

We are AI company specialized in deep learning technologies for embedded systems.
Nalbi has a very efficient, highly-optimized pipeline to develop deep learning solutions.
From data processing to modeling, device-specific acceleration, we optimize every
step so that we can achieve state-of-the-art performance.
We have Computer Vision Solutions including real-time Human Segmentation and
Single-RGB Bokeh technology. it's being commercialized. also, we are continuously
developing necessary solutions for embedded devices such as Real Time Hair
Segmentation, Face Recognition, Voice Activity Detection.
We are currently collaborating with global mobile makers, chip makers
(AP, MCU, NPU), and security solution companies.

Product / Service

Single-RGB- Bokeh

Make DSLR bokeh effect to any picture.
Re-focus on person, object or food wherever you touch.
Any picture(taken other devices, downloaded from the internet)
On-Device operation without server without Server

Real Time Segmentation

It can identify & distinguish in real-time the target(human, hair) area from the background.
we provide accurate features in real-time through a
highly optimized deep learning pipeline.
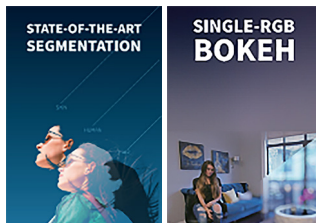
Market Status

▶ Target Market Nation and Size
Target Market Nation : USA, China, Europ
Target Market Size : $ 45 billion

Service performance reference

▶ Snow Technology License Agreement.
Qualcomm AI partner.
ARM ecosystem partner.

Future Plans

▶ Having partnership with global chip companies such as Qualcomm, ARM, STMicro...
We will continue to secure a global network and find customers such as embedded device,
security and IoT company.

Partners

arm	ST life.augmented	QUALCOMM	gyrfalcon technology	LATTICE	embedded VISION	SNOW	springcamp
ARM Ecosystem partners	STMicroelectronics	Qualcomm	Gyrfalcon Technology Inc.	Lattice	Embedded Vision Alliance Member	SNOW	Springcamp

29 ▶ NETON

AI
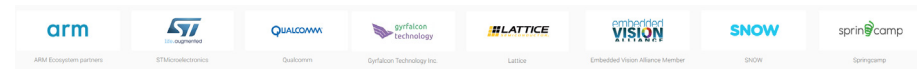
NetOn is a company aiming at realizing high-tech safety smart city by searching for people by using artificial intelligence facial recognition solution and quickly and precisely identifying the identity of various incidents and accidents.
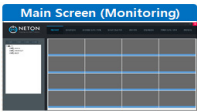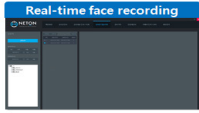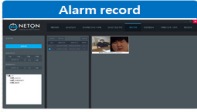
Service

Artificial Intelligence Face Recognition Solution

Product / Service

▶ Solution Introduction

Artificial Intelligence Face Recognition Solution is a next generation Face Recognition Platform that is effective for searching specific objects by real-time surveillance based on deep learning,

Market Status

▶ In developing countries, there is a tendency to adopt face recognition systems actively to solve security concerns.

▶ China's field of application account for 42% of access control and management, 30% of security, 20% of finance, and 8% of others

▶ The artificial intelligence facial recognition technology is dominant in China, and the size of the Chinese market using facial recognition will grow from 460 billion in 2018 to 860 billion won by 2021

Service performance reference

▶ 2018 PC room automated shop entrance / exit field test

▶ 2019 Hadong-gun Smart Health Park

▶ 2019 Gyeongnam Forest Service Woodland Smart Park

▶ 2019.01 Tongyeong City Control Center BMT

▶ 2019.03 Sejong Facilities Management Corporation Test

▶ 2019.03 Air Force Headquarters BMT

Future Plans

▶ Platform services to build social safety nets

Field and Tech	CEO	Est	Website
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| Email	Contact	Address
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AI

30 ▶ Odd Concepts

Focuses on utilizing Visual Cognition commerce technology in fashion domain marketing and distribution. Designs / Develops dozens of neural network models and algorithms, including distributed/parallel computing engine, in-house. Provides PXL.ai service domestically and internationally, in which system analysis / search / recommendation logic converts existing image data into contents that users need.

Service

PXL.ai Fashion

Product / Service

▶ PXL.ai Fashion is a service which uses AI-based image similarity to recommend fashion products that are similar to products with high user attention.

스타일추천 버튼 클릭   상품 이미지 분석   유사 스타일 추천
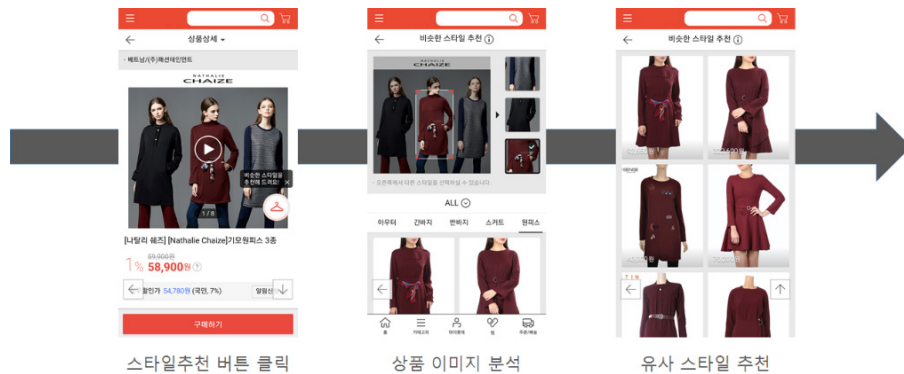
Market Status

▶ The global AI market in 2018 amounts to KRW 5.4 trillion, and is expected to grow to KRW 101 trillion by 2025. Among this, the fashion industry is expected to grow from about KRW 292 billion to KRW 5.84 trillion.

Service performance reference

▶ Currently providing services to top-tier commerce players, including IBM Watson, Samsung Electronics, LG Electronics, Lotte, and Hyundai, as well as 30 global and domestic e-commerce businesses, including ZigZag, a Soho-mall broker, and Sta1.com.

▶ PXL.ai Fashion processes more than 200 million monthly usage, a number that keeps increasing.

▶ Over 30% of CTR accomplished through the service.

Future Plans

▶ Solidify market competitiveness based on stable reference acquired through PXL.ai Fashion.

▶ Develop and launch product properties and coordinator engine by designing new algorithm.

▶ Plan active overseas sales through overseas resellers.

AI
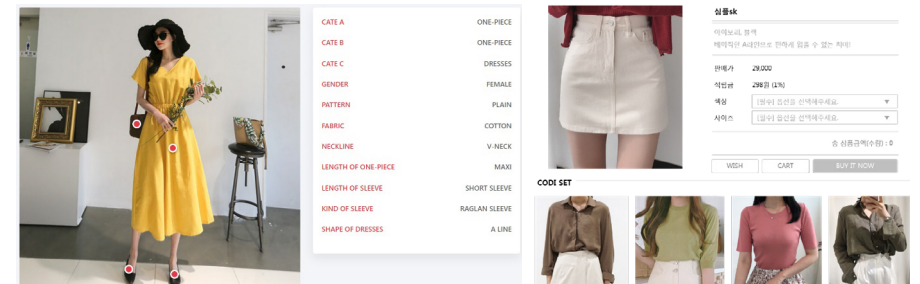
31 ▶ Oezsoft

Based on machine learning - based face recognition, encryption, and middleware technology, OezSoft is a technology company that has developed face recognition access control system, urban safety control solution, non-face-to-face accounts opening of financial institutions, and smart banking system.

Service

OezFR (Oezsoft Face Recognition) Solution

Product / Service

Urban safety control solution

▶ Tracking criminal suspects by face recognition and alerting missing people, people counting, VIP and blacklist management

Face Recognition Access and Security Device(FRMS)

▶ Face-recognition-based access-security terminals provide faster and more accurate access control.
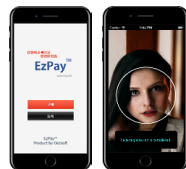
▶ Available by connecting to a security gate
  – Single Device Type
  – Server connection type

Mobile Easy Payment (EzPay)

▶ 얼굴인식 기술을 활용한 결제 인증 기능

▶ 모바일에서 0.5초 이내 얼굴 인증 가능

Market Status

▶ Face recognition technology, unlike other biometric technologies such as fingerprint recognition, voice recognition, and iris recognition, is easy to obtain information and is used in various fields such as airport entry, management of commuting, and criminal investigation.

The global face recognition market is expected to grow from 1.52 billion dollars in 2015 to 2.83 billion dollars in 2020 with an average annual growth rate of 13.3 percent.

Service performance reference

▶ Face recognition commute management system
  - CJ Logistics Center (six nationwide)

▶ Blacklist and VIP Management Solutions
  - Japanese Secure company VIP, blacklist management
    (provides gender and age estimates other than face recognition)

▶ Urban Safety Control Solution
  - Pilot project of Kimpo city

Future Plans

▶ A face-recognition payment service model using face-recognition solution is being developed jointly with distributor for 2020 service.

Through deep learning and improved recognition rate based on service environment conversion, the trackability model based on age transformation will be studied to provide a better recognition rate

OezSoft
Creative Technology eXperience

얼굴인식 기반
출입통제/근태 관리 시스템

얼굴인식 기반
바이오 인증 솔루션
PC or PHONE

얼굴인식 기반
도시 안전 관제 솔루션

얼굴인식 기반
얼굴인식 졸음방지 솔루션
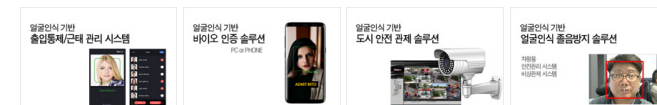
AI / Medical

32 PIXEL Display

Pixel Display Inc. is an innovative company that provides AI based eye refraction test solution by smartphone alone as there are various eye problems such as refractive errors and eye dryness are pouring out today.

Service

AI mobile eye refraction test solution 'KIZOPTER'

Product / Service

Amplyopia and refractive errors can be easily found among children younger than 8 years old. However, they cry, hide, and get scared of doctors and hospitals, so it is hard to test children's eyes. Therefore, we introduce 'KIZOPTER' which provides easy refraction test by mobile photography.

▶ **AI refraction test solution which can be easily done by photography.**
The test can be done with the phone that has camera and LED flashlight. Since it does not require patients' physical touch, fast and accurate examination is available.

- Myopia Hyperopia
- astigmatism
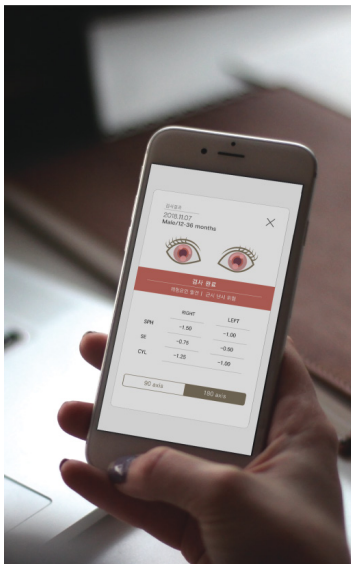- anisometropia
- amblyopia

▶ **Refraction test solution that makes infants and younger children's eye examination possible**

Younger patients could not have eye test due to difficulties of cooperation with existing eye, pediatric and many other hospitals. However, KIZOPTER only requires the minimum cooperation, so any child older than 6 months can easily have eye examination.

Market Status

▶ **The replacement of 'Home vision test kit' that provides pediatric amblyopia examination.**
- 40,238 Domestic day care centers in 2017
- Expansion with start of pilot project at National public and local day care centers.

▶ **Solution licensing to domestic eye and pediatric hospital.**
- 3,763 domestic eye and pediatric hospitals.
- Impossible pediatric and senior eye examinations are now possible
- Market expansion with start of hospitals in major cities.

Service performance reference

▶ **First completed authorization of AI based software in optometry device classification.**
- 09.2018 Manufacturing of medical device and approved suitability for quality management standard (GMP)
- 11.2018 Approved medical software of mobile based eye refraction test
- 11.2018 Completed authorization of medical device manufacturing
- 02.2019 Approved AI based medical device of AI based eye refraction test

Future Plans

▶ **Domestic future plan**
Provide our solution to daycare centers through collaboration with local public healthcare centers, start selling our solution to eye and pediatric hospitals, and start joint research for detecting additional eye diseases on our solution.

▶ **International future plan**
Provide our solution to daycare centers through collaboration with local public healthcare centers, start selling our solution to eye and pediatric hospitals, and start joint research for detecting additional eye diseases on our solution.

Field and Tech	CEO	Est	Website
AI	Kei Kwon	2018. 03	www.pxscope.com

Email	Contact	Address
info@pxscope.com	02-6264-0700	#1205, STX-V Building 128, Gasan digital 1-ro, Geumcheon-gu, Seoul, Republic of Korea
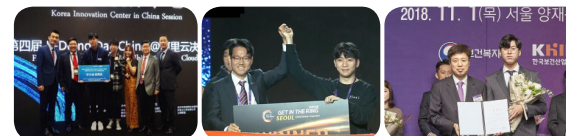
AI / Medical

33 Pixelscope

To Accelerate the Value of Movement in Sports
We are precisely measuring the movements of the people and the ball, moving away
from the existing training method which relied on 'sense' and 'experience',
and publishing high-speed image with the extracted data.

Product / Service

SMART SCOPE   **VIRTUAL** SCOPE

▶ **Ball Tracking System / Virtual AD and Broadcast Contents System**

 We provide a high-speed camera-based ball, player tracking and recording system that
can be operated without the residence of professional operator through integrated artificial
intelligence solution such as scoreboard recognition.

Extracted data is stored in DB in real time and can be monitored at remote sites. Ultra high speed
video is produced in short video along with extracted data, virtual advertisement, etc., and is
serviced to broadcasting station in real time.

TRAINING SCOPE   **REFEREE** SCOPE

▶ **Intelligent Training System / Intelligent Assistant Referees System**

 When the player is training on the court, the 14 high-speed cameras pre-installed can shoot the
training scenes such as serve, toss, and attack and provide the slow motion video with tracked
data instantly for precise analysis and coaching .

Precisely tracked ball information is used for competency assessment, sexual prediction,
and injury prevention.

In addition, ball trajectory information can be reconstructed as 3D video, which can be
provided as a referee assistance system such as line call.
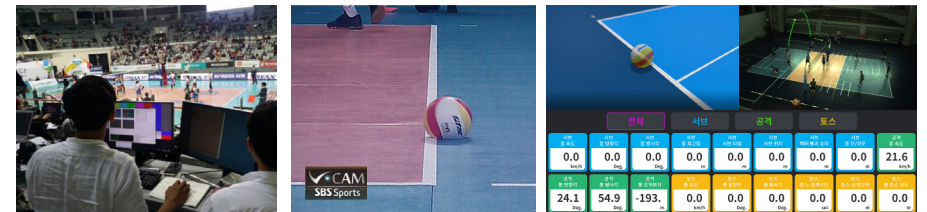
주요 고객사

AI

34 Pulse9

Pulse9 Inc. Based in Seoul, AI-based visual effects startup.
Pulse9 launched in 2019 under the name Paintly FX with a service that used artificial intelligence to speed up Video effects.

Service

PaintlyFX

▶ Paintly FX Created for creators, YouTubers, animation producers, online marketers or anyone who needs high-quality video making. Paintly FX abbreviated from visual effects is a process of integrating live-action footage and generating imagery in order to create an environment which looks realistic. Moreover, it also involoves merging of original film shooting with false or animated images.

Product / Service

▶ PaintlyFX has combined AI style transfer and AI segmentation technology to enable simple and effective Matte Painting technology. AI Matte Painting can be an effective solution to enhance the content quality in the Video FX field. Even more expressions of color combinations, shapes and textures that are beyond our imaginations can be done.
Ours're easy and fast, it takes 1min for 10 sec clips.
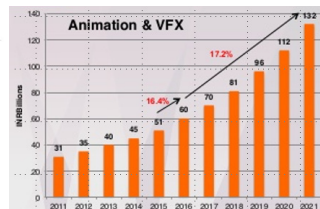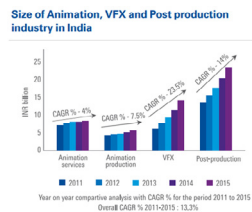
Market Status

▶ The entertainment industry majorly contributes to VFX global revenue generation.
▶ Global VFX Market will reach 19,985 millon by 2024.
▶ Due to reduct expense, movie and media industries are gradually switching to VFX industry.
  *Zion market research

Service performance reference

▶ Featured KIRARA's music videos at SXSW2019, Music meet AI, Corea impact(19.03)
▶ Co campaign Ads with Focus Media Korea(19.02)
▶ President house, new year's innovative SME product invited exibition(19.01)
▶ The first exhibition by AI artist in Korea, sponsored by Wooribank(18.12)

Future Plans

▶ New app will be launched for Youtubers, named Vlink, base on Paintly FX engine.
▶ APEC is anticipated to be the most potential market for VFX in near future.
▶ Paintly FX have targeting the big film project of APEC VFX market, and also do various entertainment event

Content Image   Style Image   Result Image

Field and Tech	CEO	Est	Website
AI	Jinwook Choi	2016. 09	www.qisens-ai.com

Email	Contact	Address
jchoi1@kaist.ac.kr	010-9125-2535	114 Yangjae R & CD Innovation Hub in Taebungro, Seocho-gu, Seoul

35 QiSens

AI
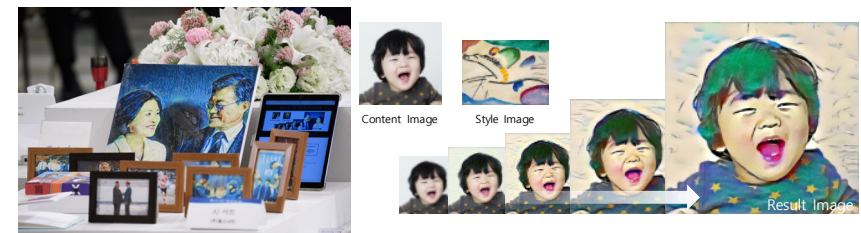
QiSens: World best class AI video analytics company

Service

UPAP: User Participated AI platform

Product / Service

▶ User participated AI platform for B2C customers
   Video analytics to B2B customers

UPAP: User Participated AI platform

Market Status

▶ Video analytics market will grow significantly, and continuously

Video Analytics
$2.77 BN 2017 → $8.55 BN 2023
CAGR 21.5%*
Fast Moving From Computer Vision to A.I
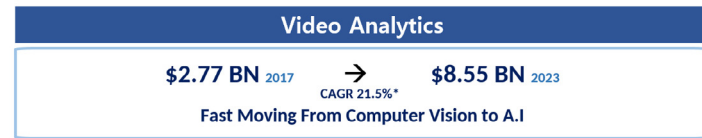
Service performance reference

▶ ANPR Busan Kwang-ahn bridge, traffic management system Top ranker of technical
   BMT of Ex.co.kr 2017 No.3 ranker of 2017 ImageNet classification challenge

Future Plans

▶ Enter ANPR global market (North America, Japan)
   Video analytics service to global customers (USA, Japan)
   Commercial launch of cloud based UPAP service

Qisens Cloud

- Fast ANPR GRE
- Collect big data
- Big data analysis
- Build meta-DB

Field and Tech
AI

CEO
JongSu Kang

Est
2016. 01

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AI

36 Safeusdrone

<Drones for Life, Drone for Saving the World>

Apply artificial intelligence algorithm to develop drones that can replace dangerous or difficult tasks for people. We are currently working with the Korea Electric Power Corporation to develop <Drones for Precision Inspection of HighPower Transmission Lines> and <Drone for Infectious Disasters in GreenHouse>.

We intend to continue to develop artificial intelligence and the convergence technology of Drone to become the leader of industrial drones that can be incorporated into real life.

Product / Service

Drones for Precision Inspection of HighPower Transmission Lines

▶ Drone that makes self-inspection of high-power transmission line inspection work, which is costly and the lives of transmission line inspectors, by injecting A.I. technology and drones that have completed protection of electromagnetic waves. <Volt Spider Drone> has developed wirless charging technology by reversing harmful magnetic fields that are generated by high-pressure transmission lines, and is designed to operate for hours in a row, exceeding the flight limit of 20 minutes, which is the biggest weakness of drones. It identifies obstacles through A.I. and issues with transmission lines and facilitates transmission inspection and management. It also provides solutions to reduce costs and minimize energy losses by big data

Market Status

▶ Domestic Human Resource Inspection Market: 550 billion won / Overseas Manpower Inspection (major 8 countries) Market: 25 trillion won

Service performance reference

▶ Agreement with Korea Electric Power Corporation - Test

Future Plans

▶ Approval of use of Korea Electric Power Corp. and sales of demand sources by partner companies / equipment rental businesses after completion of testing of power lines

Field and Tech
AI, NLP

CEO
Jongyoun Kim

Est
2016. 11

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12, Boneunsaro 47 gil, Gangnam Gu, Seoul

AI

37 Scatter Lab

Scatter Lab is a startup committed to developing cutting-edge AI conversation technologies that can build emotional connection between users and AIs.

Service

Pingpong

Product / Service

▶ Pingpong is the easiest and simplest way to solve the small talk problem of conversational AIs. Based on over 10 billion human-to-human mobile message data, Pingpong conversation builder helps you to build non-task-oriented small talk conversation for conversational AIs.

Market Status

▶ AI Speark market – $2.1B by 2020
▶ 99% of smartphones have virtual assistant
▶ NLU companies like Api.ai, Wit.ai etc acquired by Google and Facebook respectively

Service performance reference

▶ Owns 10 billion Korean KakaoTalk message data, 100 million Japanese LINE message data
▶ Partnered with Kakao and Google for building friendly conversational Ais
▶ Investment from NCSoft and Softbank Ventures Asia etc. ($6.5M so far)

Future Plans

▶ Plan to launch casual conversation builder 'Piingpong Builder' in 2Q/19
▶ Plan to release Japanese version of Pingpong technology in 4Q/19

AI, IP Service

38 SejinMind

Intellectual property service technology company using data and artificial intelligence technology Company that offers differentiated experience in acquiring and managing intellectual property rights and pursues innovation

Service

Smart Online Trademark Registration "MarkNavi"

Product / Service

▶ **MarkNavi is a service that enables applicants to easily and intelligently process all the procedures from trademark application to registration**

Online Trademark Registration Services Comparison		
	Existing Online Services	**MarkNavi**
Application Process	Filing applications without considering the scope of rights and registrablity	High quality trademark application process by consulting online with trademark attorneys
Online Service	Online receipt of only application requests	All process from application to registration is made transparent online
Payment Method	Possible to proceed with an application only through bank transfer	Online Credit card payment possible

Market Status

▶ In IP services, the introduction of technology has been relatively delayed, but with the recent ICT technology development and the AI, the convergence of the intellectual property industry and technology will be stimulated.

▶ Intellectual property service work will be automated and more efficient, and service quality and customer experience will be improved.

Service performance reference

▶ **Development of AI based trademark similarity judgment technology**
By utilizing existing trademark examination results, we can obtain a data set that can learn the trend of similar judgments among trademarks. Then, the coordinate values are assigned to the disassembled texts. Using deep learning, the core technology is developed to judge the similarity of trademarks by judging the degree of similarity between images after.

Channel	Trademark	Phonetic Features
Red Green	아디다스 Adidas	
Red Green	구글 Google	
Red Green	페이스북 Facebook	

Trademark Similarity
Judgment Technique

Future Plans

▶ **Establish company brand portfolio management platform**
- Immediately identify the status of trademark applications filed in Korea and abroad
- Simplify data communication integration and data collection and reorganization

Field and Tech	CEO	Est	Website
AI	Howook Shin	2018. 11	www.selectstar.ai

Email	Contact	Address
contact@selectstar.ai	010-3081-3046	773, Yuseong-daero, Yuseong-gu, Daejeon, Republic of Korea
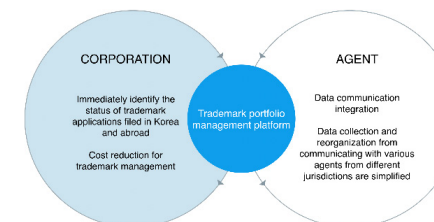
AI

39 Select Star

Platform for collecting and processing photos/voice/video/text data through participation by mobile users Assured Quality - Double check all data.
Draw clear data design and guidelines for customers based on deep learning background

Service

Select Star - Mobile Crowdsourcing Platform for AI Training Data Service

Product / Service

▶ Performs the data collection/processing requested by the customer through the users of Select Star's own mobile app 'Cash Mission', double checks all results, and delivers high-quality data quickly.
Image & Video (collection, classification, 2D Box, Instance Segmentation, Polyline & Key Point Annotation), Voice (recording, transcription, classification, editing), Text (collection, OCR transcription, classification, analysis)
Produces various data quickly through 1300 Korean users and 2 million Filipinos (exclusive partnership agreement within Korea with Pera Swipe, a Philippines-locked screen advertising app).
Developed Select Star's unique mobile UI/UX for high accuracy and checks all data worked with two or more experienced inspectors for quality assurance.
Developing various solutions to enhance the quality of data and ease of users, including location, context-based custom data collection recommendation algorithm, semi-automatic data processing and validation through deep learning.
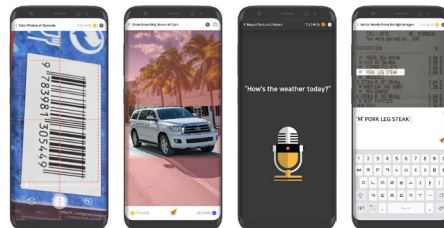
Market Status

▶ Global : Average annual growth rate of 56% of total AI markets and $98 billion (2018, IDC) in 2022.
- Mighty AI, established in 2014, total funding amount $23 million.
- Scale, established in 2016, total funding amount $25 million.

▶ Korea : Since South Korea's AI Training data market is worth $89.5 million (100 billion KRW), but only start-ups exist in the market.
- Crowdworks, established in 2017, total funding amount $2.5 million, first annual sales $1.3 million.
- Aimmo, established in 2018.
Select Star aims to be number one in the Korean market, by the strength of mobile and high-quality data.

Service performance reference

▶ Processed data: 200,000 units
1) KEPCO-KAIST AI Computer Vision Research Center : Object Bounding Box, Polyline Annotation, Electric Pole Image Collection.
2) Hypersensing Inc. - Vehicles Object Bounding Box.
3) Nearthlab Inc. - Wind Turbine Object Bounding Box.
4) Hodoo AI Lab Inc. - UHD Video Collection.
5) Philippine Lock Screen App Pera-Swipe - Partnership Agreement.

Future Plans

▶ Semi-automatic data processing and validation through deep learning
Aimming $1 million in sales, 100,000 cashmission users in Korea, 30 customer companies for the first year. Extend to mobile-specific data, such as location and Wifi information collection. Based on 2 million Filipino users, aims to enter global markets.
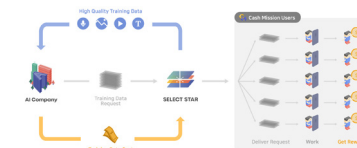
AI

40 ▶ Skelter Labs

Skelter Labs is a strong engineering driven AI technology company focusing on developing core technologies in Conversation, Speech, Vision and Hyper-personalization. As a technology provider, Skelter Labs' priority is to create value for businesses by making existing solutions work better with applicable AI.

Service
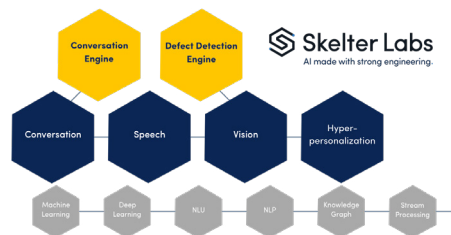
Conversation Engine, Defect Detection Engine

Product / Service

▶ Skelter Labs applies its four core AI technologies into various industries under a B2B2B and B2B2C business model.

Applied cases as of Q1 2019

Core AI Technologies

Tech basis to develop core AI technologies

Conversation Engine | Defect Detection Engine

Skelter Labs
AI made with strong engineering.

Conversation | Speech | Vision | Hyper-personalization

Machine Learning | Deep Learning | NLU | NLP | Knowledge Graph | Stream Processing

▶ Conversation Engine
  - Hybrid model by integrating Rule-based and Deep learning-based to achieve higher accuracy
  - Better performance with less training data in Korean language compared to global top companies

▶ Defect Detection Engine
  - Advanced model based on Machine Learning / Deep Learning that can be trained within a small amount of training samples of defects
  - Accumulated know-how & expertise in metal and plastic surfaces that can detect various defects with high detection rate

Market Status

▶ Conversational AI
  - Global Natural Language Processing market will grow into USD 22.3 billion by 2025 (source: Tractica)
  - Chatbots will power 85% of all customer service interactions by the year of 2020 (source: Gartner)
  - More than 50% of enterprises will be spending on chatbot creations by 2021 (source: Gartner)

▶ Vision
  - Global machine vision market will reach USD 123 billion by 2023 (source: Marketandmarket)
  - Global quality assurance & inspection market based on machine vision will grow to USD 6.4 billion by 2022 (source: Marketandmarket)

Service performance reference

▶ Conversation Engine
  Signed MOU on joint project for AI platform based intelligent Contact Center solution

▶ Defect Detection Engine
  One of the '5G Smart Factory Alliance' members launched in December 2018 for building a win-win ecosystem in the Smart Factory sector

Future Plans

▶ Skelter Labs focuses on consistently advancing its four core AI technologies - Conversation, Speech, Vision and Hyper-personalization in order to successfully implement the technologies for various use cases in different industry verticals. The company's long term goal is to contribute building an AI ecosystem, with Skelter Labs powered technologies, where many enterprises in different industries can leverage synergies.

AI / Image Search & Shopping

41 ▶ Staping

Developed CBIR image search engine, owned the original technology, automatically analyzes pictures (images), and searches for the most similar images with shape, color and pattern of objects. 22 large Korean online shopping malls, Two years have been running a demonstration service to search for fashion and apparel products by photos (images) on smartphones. In 2019, the company is promoting a mobile fashion shopping portal service by collecting and searching DBs, and opening shops with over 3000 SHOPs of small and medium online shopping malls. Fashion, apparel product DB 6 million, Introduction to shops, shopping connection, image search, artificial intelligence product recommendation service through big data analysis, shopping information SNS.

Service

Korean AI Fashion Style shopping "Staping"

▶ Staping is an AI mobile shopping app and platform. Eliminate discomfort and search for similar items with pictures (images).Take a photo in smartphone or upload a photo, or if you don't have a photo,choose from over 300 item designs, and can search for similar products of shape and color. It is advantageous to search for fashion, clothing products. Connecting directly to the shopping mall.

▶ 22 large Korean online shopping mall fashion products have been servicing for image search.For a fashion shopping mall portal service, We are upgrading the DB to 6million items of 3,000 fashion shopping malls. We provide image search shopping, product recommendation service through big data analysis, and fashion information SNS service. We support the entrepreneur shops in marketing with product recommendation, advertising, and event. Image search is a different function from existing other fashion online shopping malls.
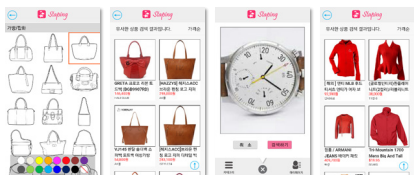
Market Status

▶ The Korean online shopping market is expected to exceed 78.227 trillion KRW in 2017, exceeding 111.5 trillion KRW in 2019, and 190 trillion KRW in 2022. In 2017, the market for fashion items such as fashion, apparel, bags, shoes, and miscellaneous goods reached 72.712 rtillion KRW. In 2017, the clothing and fashion online market accounted for 17.9% of the total, reaching 3 trillion KRW, an annual growth rate of 18%. Mobile shopping is growing at about 40%, which is driving the growth of the online market. In the image search field, since the introduction of similar product services through image search for the first time in 2016, cumulative users exceeded 6 million users in June 2017, sales in creased by 75% per month, and purchase rates rose from 2% to 10% Which is 5 times higher than that of the previous year. Market analysis is that users are using a lot of similar product recommendation services through image search.

Service performance reference

▶ Collected and built 2 million items of fashion and apparel products for 22 major Korean online shopping malls, and has been servicing on image search for similar products, and connecting shopping malls.
▶ Awarded the Grand Prize in the shopping area in Korea for Good App Evaluation in 2017.
▶ Participated in the 2018 International Artificial Intelligence Exhibition and Competition.
▶ Staping Image Search Engine and App Software program copyright has been registred. (Korean Copyright Commission)

Future Plans

▶ Open 500 domestic small fashion shopping malls in Staping in the first half of 2019.
▶ Upgrade relaunch Staping 2.0 version, with 3,000 stores and 6M items DB in the first half of 2020.
▶ Fashion, clothing online shopping portal and image search, AI product recommendation service goal.
▶ Free join and sales commission for shops, ad revenue model through product ad, product recommendation advertisement service.
▶ In 2020, we plan to promote the export of our artificial intelligence shopping platforms into Japan, China, USA and Europe.
▶ We plan to expand our business overseas through joint venture and business alliance partnership.
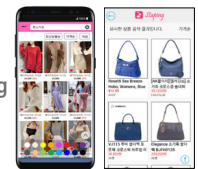
AI

42 STORY&BROTHERS

An enterprise that creates jobs through recycling and redistribution of resources, and forms a culture in which all members work happily.

Currently, it provides team building service of project base for new types of organization and work style in line with the flow of 4th Industrial Revolution.

Service

A team building platform based on AI propensity analysis 'SAPIENS'

▶ Based on expert network, Sapiens is a platform that allows users to prepare for start-up or create projects through team building using chatting between users and artificial intelligence propensity analysis matching technology.

▶ Main functions
  - team member matching technology using AI propensity analysis technology according to type of writing
  - Ease of project creation and team activity
  - Ability to communicate among team members and to manage project collaboration through chatting
  - Career Validation System

▶ Main target users
  - Master of science and engineering and experienced manufacturing and production
  - Professional people, such as lawyers, accountants, tax agents, financial experts, etc.
  - Companies or individuals who want to collaborate or team up with them to work on a project

MANAGE

IDEA — PROJECT

CHAT

sapiens service team building

Sapiens
Expert matching platform through team building

AI matching
Text qualitative analysis using SNS (Facebook) and technical papers; artificial intelligence matching

Solution
Big Data/Artificial Intelligence analytical platform

Market Status

▶ The realization of "innovative start-up country" through venture investment is a paradigm for government policy.

▶ Quantitative indicators for participating in start-ups by high-end technology personnel such as the number of venture companies, the index of initial start-up activities, and the number of in-house ventures continue to rise.

▶ A case study has found that among the tendencies of avoiding the start-up of high-quality technical personnel, there is no co-worker to start a business with, and a team composed of talented individuals with expertise is more likely to succeed in starting a business.

▶ Team characteristics of start-up companies are considered the most important factor in VC investments.

Service performance reference

▶ AI propensity analysis and propensity-based matching technology establishment
▶ Development of AI education program in Intel Korea and selection of open community management system
▶ Confirmed registration of Intel Korea partners
▶ Entire registration of companies participating in big data/artificial intelligence projects at Hyundai Motor's Namyang Research Institute
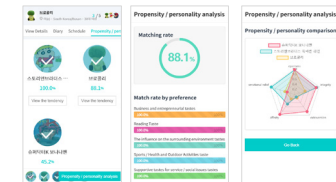
Future Plans

▶ Development and Platform Enhancement
  - Upgrade artificial intelligence propensity/taste analysis
  - Development and introduction of PG function and group survey and target response system
  - Development of AI taste analysis and product/service recommendation modules
▶ Launch premium service
  - Matching and collaboration systems between clients (enterprise) and experts
▶ Expand group-oriented B2B sales
  - Clients (provides an open operating system for enterprises, associations and organizations))

Field and Tech
Big data, Artificial Intelligence

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Big data, Artificial Intelligence

43 Supermenz

Supermarket of Unattended Operation to Artificial Intelligence

Service

SUPERMENZ

▶ SUPERMENZ is new service to conveniently order various groceries in the local supermarkets. We use A.I(artificial intelligence) to automatically analyze the status of supermarkets in real time and operate unattended mobile supermarkets.

슈퍼쇼핑 슈퍼배달

동네 슈퍼마켓
모바일 주문배달 서비스

무인운영 슈퍼마켓

모바일 슈퍼마켓
무인 운영관리 서비스

Market Status

▶ Revenue of local supermarkets are steadily increasing their profits by 3~4% due to increase of one-person households who do the shopping in close range.

Service performance reference

▶ Currently Service to South of Seoul
2018Y The adoption of of research and development supervision institution hosted by Ministry of SEMs and Startups
2017Y The adoption of of research and development supervision institution hosted by Ministry of Science and Technology
2016Y Investment attraction of Sazze Partners (USA Silicon Valley invertor)
2015Y Investment attraction of Primer
2015Y The top of Game Of D.CAMP

Future Plans

▶ 2019Y 3Q Service to all of Korea
2019Y 4Q Service to Southeast Asia(Vietnam, Singapore)

실제 매장 영수증 정보　　　추출된 상품 정보　　　모바일 슈퍼마켓 상품 동기화

AI

TG9.AI

TG9.AI is a company focused on innovations in our own Proprietary UX Solution for amazon Alexa's 3rd party **Smart Display Speaker** Manufacturers & Alexa Voice Service. We've developed Embeded Software, UX/UI Solution and Platform/Engine. Also, we're just working on amazon Alexa-compatible **"Smart Mirror"** for Beauty, Healthcare, Fashion(Virtual Try-on).

Service

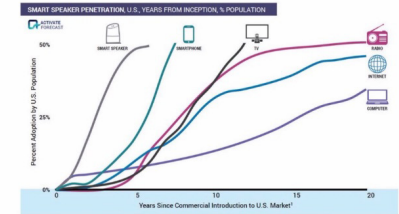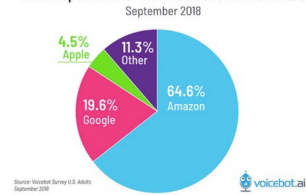### ICON UX Solution

▶ ICON UX Solution(amazon Alexa's 3rd party Smart Display Speaker Manufacturers & Alexa Voice Service. In Certification now
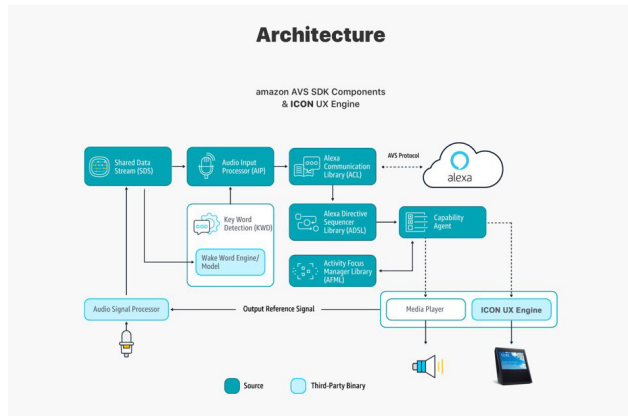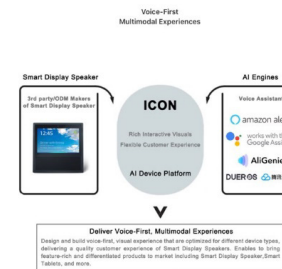

Market Status

Business Plan

▶ Also, we're just working on amazon Alexa-compatible **"Smart Mirror"** for Beauty, Healthcare, Fashion(Virtual Try-on).

Field and Tech	CEO	Est	Website
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Smart Factory Platform

45 UlalalaLAB

We supply smart factory platform optimized for manufacturing based on industrial IoT, big data, and industrial AI technology.

Service

Industrial IoT and Big Data-Driven Smart Factory Platform, WimFactory

Product / Service

▶ Wimfactory is a smart factory platform based on industry IOT and Big Data. Its Real-time collection and analysis of plant data enables optimized plant operation by using IIoT device Wicon to automatically collect the sensors / facility data and smart factory integrated management system Wim-X based on Big data and machine learning.
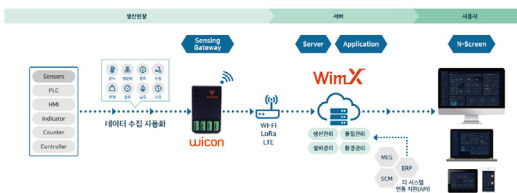
▶ Automation of sensor / facility data collection
▶ Data visualization and real-time monitoring
▶ Threshold and data analysis based alarm service
▶ Operational Statistics and Analysis Report
▶ N-Screen (PC / Tablet / Smartphone)
▶ Compatible with External system interworking support (MES etc.)

▶ Smart factory is built easily by connecting sensor or PLC, HMI, Indicator to Wicon and linking with Wim-X. Therefore, it can be easily applied to the desired management part without changing the existing facilities and environment. Wicon automatically collects real-time data, stores it in the cloud and on the server, and Wim-X analyzes and visualizes the data to provide it to users through a dashboard. Wim-X can be used not only on PC but also on various devices such as tablet and smartphone, so you can check the factory status anytime and anywhere.

Smart Factory IoT device (Wicon)
Connectable with various sensors
 - connected with various sensors such as temperature, humidity, proximity, and vibration
Max. 4 channels connected
 - RRS232C / 485 support
 - I2C, SPI support
Removable module type
 - desired network module selectable to support various network environments smoothly
 - Bluetooth, WiFi, 3G, etc.

Smart Factory Integrated Management Solution, Wim-X
Live monitoring
 - Widget-type dashboard to set up the screen as users like
Event alarm
 - Real-time alarm when out of threshold value
 - 3-step (Attention / Warning / Risk)
Analysis report
 - weekly, monthly, and quarterly data statistics and analysis
 - Report downloaded in Excel

Service performance reference

▶ Local : Established Smart Factory in many companies including Atlas Copco Korea (tool company), Frotec (auto parts manufacturing company), AB medical, Noru paint
▶ Overseas : Established Smart Factory in Adidas shoes factory in China and Vietnam and Nike shoes factory in Indonesia

Future Plans

▶ Smart Factory Platform upgrade
  PLC & facility built-in data acquisition device release (low cost model)
  Development of machine learning algorithm specialized in each management field
▶ Expansion of local and overseas Smart Factory
  Local : Supply of unit solutions in production / quality / facilities / environment for building smart factories in small and medium enterprises
        (Registered as a supplier of SMART factory support project run by government in 2019)
  Overseas : Exports smart factory platform with distribution contract with local partners in each region

Field and Tech
AI

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AI

46 Vuno

Vuno delivers innovative deep learning applications that screen and diagnose diseases from medical images, biosignals, and EMR records.

Service

Healthcare AI diagnostics

Product / Service

▶ **Vuno Med® Bone Age:**
Provides automatic assessment of bone age for children and adolescents who have growth problems

▶ **Vuno Med® Chest X-ray:**
Screens for pneumothorax, consolidation, opacity, effusion, nodules in chest x-ray images

▶ **Vuno Med® Lung CT AI:**
Screens for lung nodules in CT exams

▶ **Vuno Med® Fundus AI:**
Screens for lesions and abnormalities in fundus

▶ **Vuno Med® Deep Brain:**
Screens for dementia and Alzheimer's disease

▶ **Vuno Med® DeepEWS:**
Screens for cardiac arrest based on vital sign inputs

Market Status

▶ According to Frost & Sullivan, artificial intelligence and cognitive computing systems in healthcare finds the market earned revenue of $633.8 million in 2014 and estimates $6,662.2 million in 2021 at a compounding annual growth rate of 40%.

Service performance reference

▶ We currently have customers such as Asan Medical Center, which is a top 3 academic center in Korea, and over 4000 clients have used our Vuno Med – Bone Age product in the cloud

Future Plans

▶ We expect 5MFDS approvals and 3 FDA / CE approvals for our Vuno Med series.
We plan commercializing these products as standalone products, a cloud based service, PACS integrated solutions, and embedded software technology in x-ray scanners.

Field and Tech
AI

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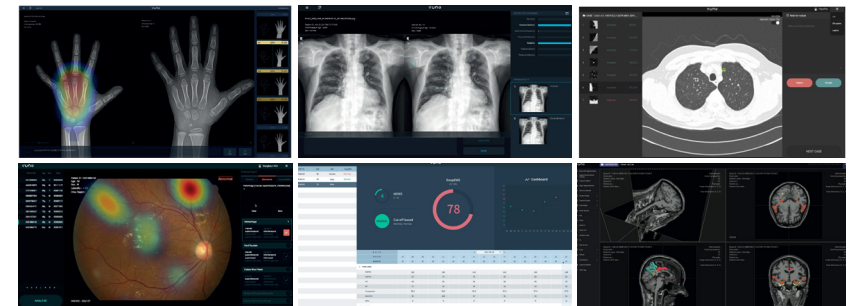
AI

47 Wert Intelligence

Patent information is the only data that contains all of the core business technologies in the world. Patent information will become increasingly more important with technological development and innovation. We, Wert Intelligence, provide a web-based A.I. global patent search & analytics solution, keywert. The keywert will lead marvelous changes in the business environment of the global market through enhancing users' accessibility to global patent information.

Service

keywert

Product / Service

▶ Keywert' is a patent search engine to overcome search obstacles with AI and real-time analysis engine technology. The existing patent search system involves a one-way communication process that provides only the patent data requested by users. Keywert provides the results desired by users through two-way communication.

▶ Keywert is an AI patent search engine. To create it, completely new technology was applied through analyzing statistics of big data from various patent data sources, including claims, patent families, biographical information, and the knowledge and know-how of patent attorneys. Such innovation is based on our real-time analysis techniques. Users can quickly and accurately find patents similar to techniques that they want to find based on agreement with their search strings, similarity between patents, features of each technological area and results of text mining.

Future Plans

▶ Among the various IP tasks, (1) patent search and analysis, (2) patent trial and litigation, and (3) translation are important and very time consuming.
The new version of AI Patent Search Engine 'Keywert' and 'IP KINKONG' with IP-specialized artificial neural network technology beyond traditional quality can dramatically reduce the time required for these three IP tasks. Through our service, from patent document to patent trial to litigation, it's convenient and easy to use in one solution.

Field and Tech
AI

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AI

48 ▶ Wonderful Platform

Wonderful Platform Co. provides SW platforms such as chatbots, healthcare, caring services, and intelligent avatars, by using artificial intelligence and big data-based technologies with robotics and laser optics applications, which are the key technologies of the 4th industry.

Service

Care (Senior / Infant) Services, AI Avatar Platform, Next Generation AI Terminal

Product / Service

AI Robot

OCTOS

UO+

▶ **Care Services**
We utilize artificial intelligence devices that apply image recognition, natural language processing, and data analysis technology to provide customized care services for seniors and infants as well as guardians.

▶ **AI Avatar Platform**
It is a platform to trade your own 3D character avatars, or to purchase celebrity avatars such as K-POP stars and use them in mobile or AI terminals.

▶ **AI Robot (Beanq, Elf, Nano)**
Interactive robot with artificial intelligence technology keep you company or can help you to order menu in shop.

▶ **Next Generation AI Terminal (OCTOS, UO+)**
OCTOS, a highly similar hologram terminal using laser optical technology, and UO +, the first portable beam projector using artificial intelligence technology, are to enjoy a variety of contents on a large, bright screen anytime, anywhere.

Market Status

▶ **AI Robot**
- The market size of artificial intelligence robots is expected to reach $ 12 billion in 2023 from $ 2.8 billion in 2017.

▶ **Big Data**
- The Big Data market is expected to grow from $ 35 billion in 2017 to $ 103 billion in 2027.

▶ **Next Generation AI Terminal**
- The artificial intelligent speaker market is expected to reach $ 8.7 billion in 2022 from $ 2.5 billion in 2017.
- The pico projector market is expected to grow at a CAGR of 32% from KRW 238.2 billion in 2015 to KRW 958.5 billion in 2020.

Service performance reference

▶ Chatbot Builder (2017), Inbi Appstore (2018)
▶ Artificial Intelligence Coffee Bot Service in 100 coffee shops in Seoul (2018)
▶ Parent Care Services Wadiz Cloud Funding (ongoing)
▶ UO+ Indiegogo Cloud Funding (ongoing)

Signed MOU / NDA with domestic and overseas partners
- Overseas : Hutchison in Hong Kong, LDC(SM Entertainment) and Softbank subsidiary in Japan, QIHAN and ROOBO in China, ALTUMVIEW and DWAVE in Canada
- Domestic : SKT, BANGJOO, INSUNG DIGITAL, GKES, MOA Planet, SEA, GOC

Future Plans

▶ Release "Dasomi", a senior care service
▶ Entering into the Avatar character business through the collaboration with entertainment companies
▶ Release UO+
▶ Release OCTOS
▶ Developing bloodless blood glucose measurement solution
▶ Developing a security solution (AI Deep Finder)

Korea Artificial Intelligence Association (KORAIA)

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2019
KOREA AI Startup

We are game changers

KORAIA
Korea Artificial Intelligence Association
사단법인 한국인공지능협회