

Medical Video Data Transformation

Medical Video AI expert Corporation

Medical Media
Technology
Expert
Group



ver.05.02.A



COMPANY



Founded

Jul. 5th,2016



Member

35peoples



Location

Seoul, Korea



Venture Business certification
Corporate R&D Center
Hi Seoul brand certification
Medical device manufacturer
Innobiz Certificate



Intellectual property rights
5 registration
6 application
2 Trademarks



TIPS / MSS / MSIT / NIA / NIPA
Developing core solution
through 12 national task
completion.



Co - research medical
institute -
18 University hospitals,
1 specialized hospital

MILESTONE

On the Business stage after POC and R&D stage completion for the major technology

Video Data Infra technology development stage

POC (1.5M\$ sales)

2022 2M\$ sales

2016~2018

2019

2020년

2021

2022

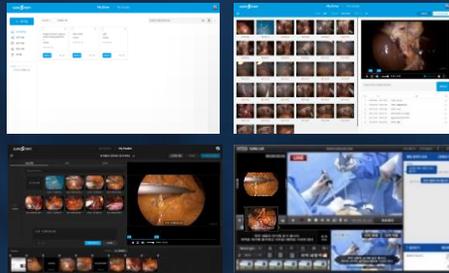
Indexing Engine

- Scene & Shot analysis engine
- Indexing after recognizing bleeding and tools



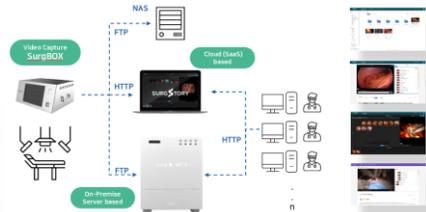
Surgical Video Solution

- Video Manager / Annotation Editor(Web & PC) / Live Surgery
- Video Capture (HW)



Intelligent VACS 개발

- Surgical Video Archiving
- Cloud Service & On Premise



Video Archive & Communication System

Development of artificial intelligence recognition technology



VACS supply



AI, Data Tech Supply



Doctor's Society platform



Video base AI tech and Medical information system

Video base Education and Research community service



Global Market Expansion (Edu, Solution)

AI based R&D

- TQIP (Trauma Quality)
- Ultrasound Optimal View
- Musculoskeletal Diagnosis & prescription



ISSUE

Medical Video has its intrinsic high value for the industry.
90% of Videos are disposed and lost
due to absence of the standardized system

Up to 90% HDD and CD form saved videos are disposed and lost



Data
Contents

Academic and Edu contents



AI research data



Upgrade data for the Surgery robot



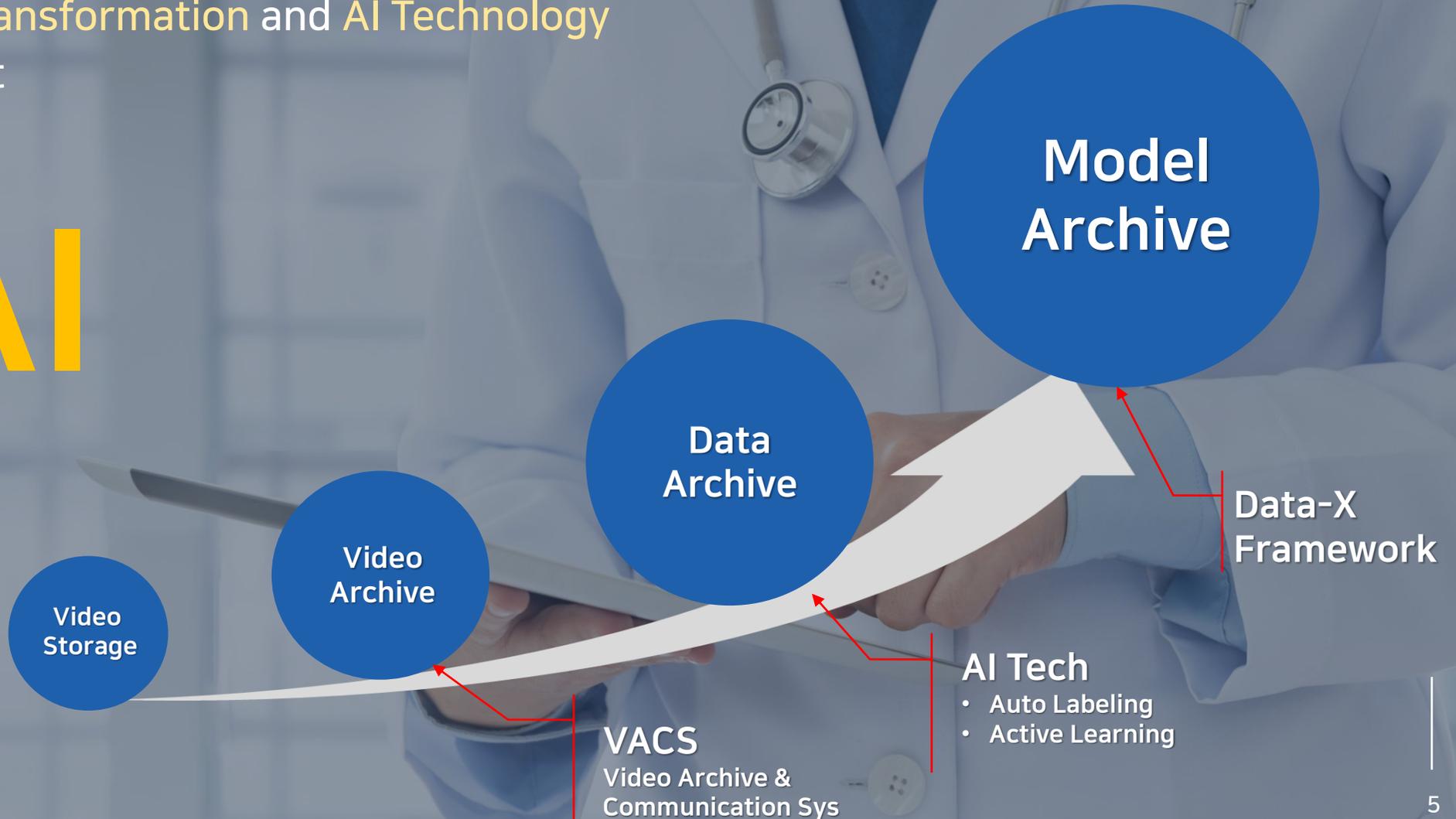
MISSION

Offer **Complete Cycle solution and technology** for the **Video Data Transformation and AI Technology** product development

Enterprise **AI**



Academic **AI**



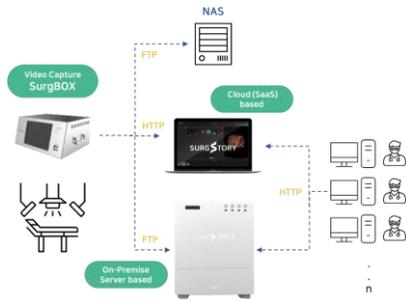
VACS
Video Archive &
Communication Sys

AI Tech
• Auto Labeling
• Active Learning

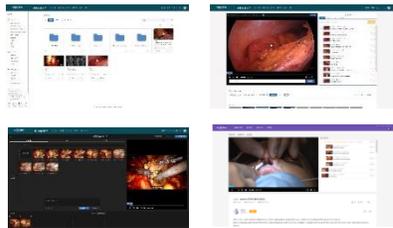
**Data-X
Framework**

KEY SOLUTION

Data Archive System **VACS**



- On-Premise / Cloud
- Application



Video & Data Community **SurgStory.com**



- Video, Image data archive
- Channel form community
- Video based debate, education
- AI data research platform



AI Technology **X-NET | Data-X FW**



- Active Learning based
- Plug In AI framework
- Labeling tool "AnnoVIE"
- X-Net
- Data-X Framework

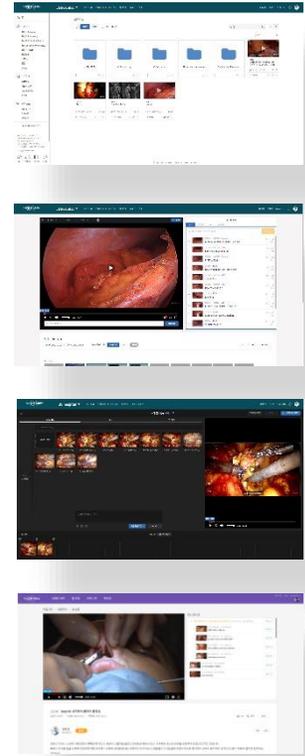
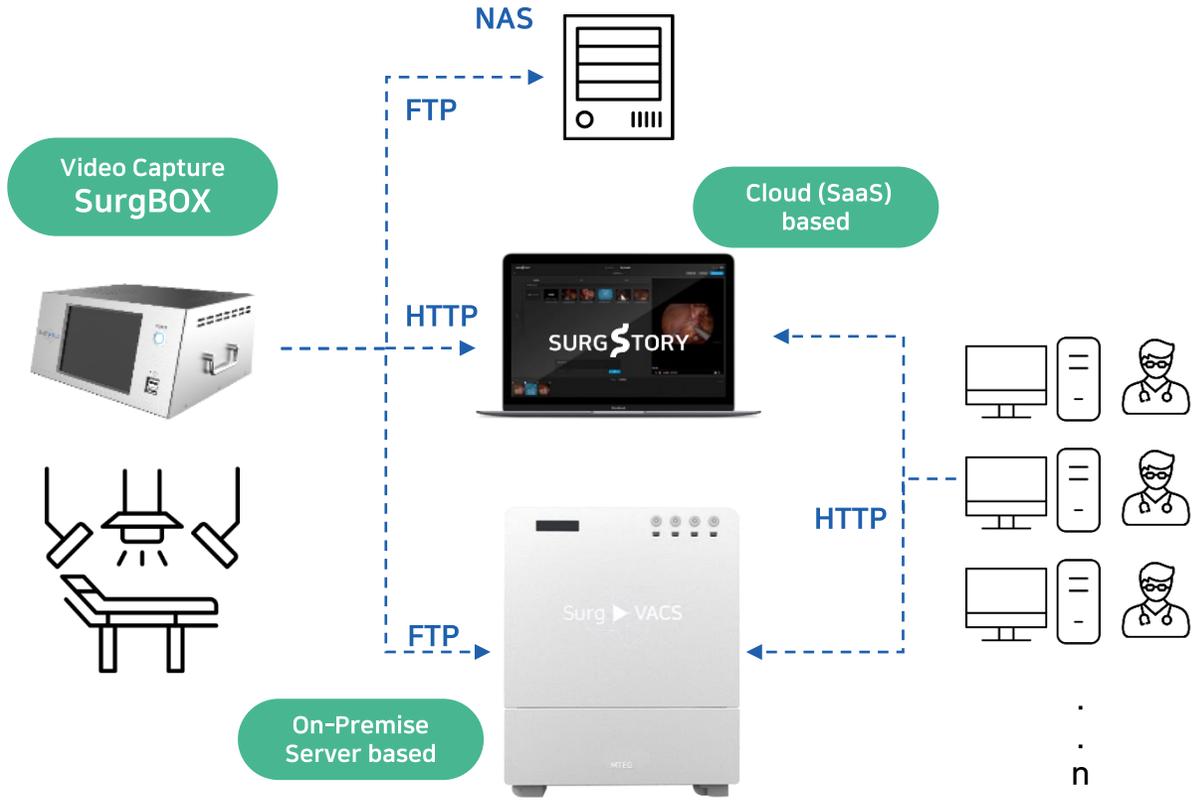
nipa 정보통신산업진흥원
National IT Industry Promotion Agency

AI Hub

데이터바우처

DATA Archive

Integrated medical video managing system VACS Video Archiving & Communication System Nationwide 18 University hospitals



- Video Manager**
Collected Video can be stored/managed/searched/statistically visualized/shared.
- Annotation**
Easy annotation and datazation by classed indexing frame
- Video Editing**
Video contents(education, presentation) can be easily created and shared
- Video Community**
Video based mentoring and studying community solution.

DATA ingathering Device

SurgBox Video Capture & Transmitter

The videos are automatically captured and transmitted from the operation room or exam room.



환경설정

저장 / 전송 / 단말/용량 / 비디오 입력 등 설정 가능

PID입력

PID (Patient ID) 입력으로 파일 관리

의사계정지정

의사 별 개인 계정으로 자동 저장 됩니다 (클라우드, 전용 서버 사용시)

비디오캡처

실시간 비디오 캡처 기능으로 프레임 무손실

데이터관리

PID, 의사명으로 파일 관리 및 USB 로 전송 가능

자동 전송

개인용 NAS, 서버(surgVACS) 또는 클라우드 (SurgStory.com)로 자동 전송

| Model | SB100 | SB200(예정) |
|------------------|-------|------------------------|
| Input | 1ch | 2ch |
| Resolution | 1080p | 1080p 2ch 2160p 1ch |
| Storage capacity | 1TB | 2TB |
| 3D | X | O |
| audio | O | O |
| Image Capture | O | O |
| PIP control | X | O |

DATA Server System

Archiving Server

On-Premise system or Cloud Archive for managing hospital internal data.

Small Size

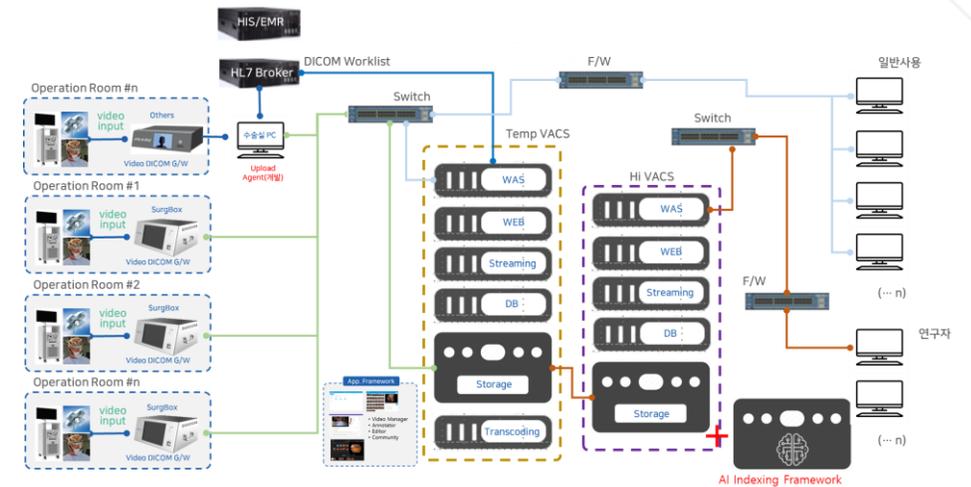


Middle Size



| Model | SS100 | SS200 |
|-------------------|--|--|
| Type | Small size (personal) | Mid-size (Rack type) |
| Purpose | Personal, small size clinic | Clinic or Center, specialized hospital |
| Storage | 24TB | 96TB |
| User capacity | 10 | 50 |
| AI F/W expansion | x | o |
| Storage expansion | Possible (max. 64TB) | Possible (max. 192TB) |
| Offering SW | Video manager, annotation, editor, community | |

Full Range



Cloud



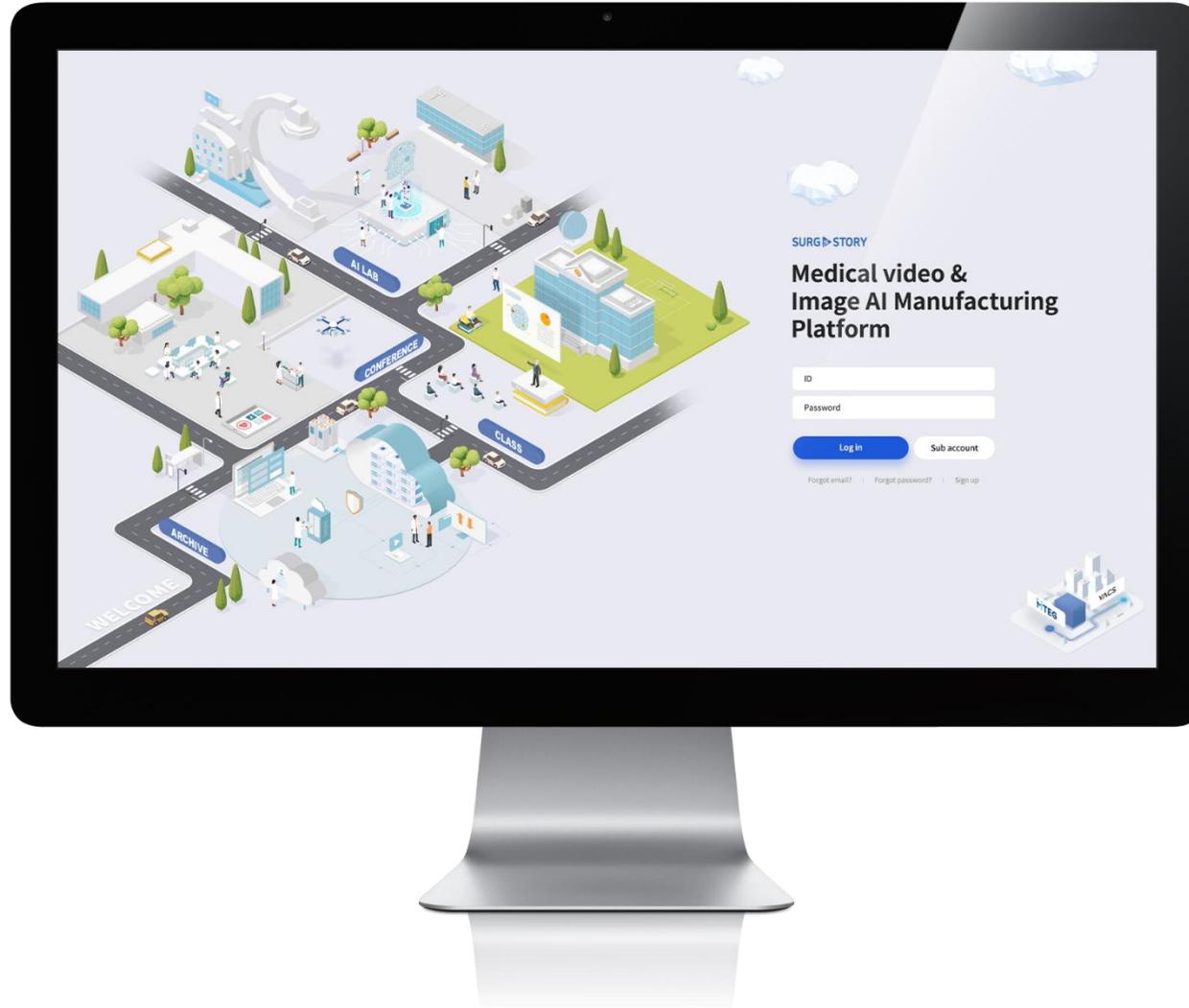
COMMUNITY
SurgStory.com

Global Medical Video Education & Community Platform SurgStory.com

Academic and Education Contents based Global Communication service launching(2023 open)

ARCHIVE
Drive

CONFERENCE
Academic

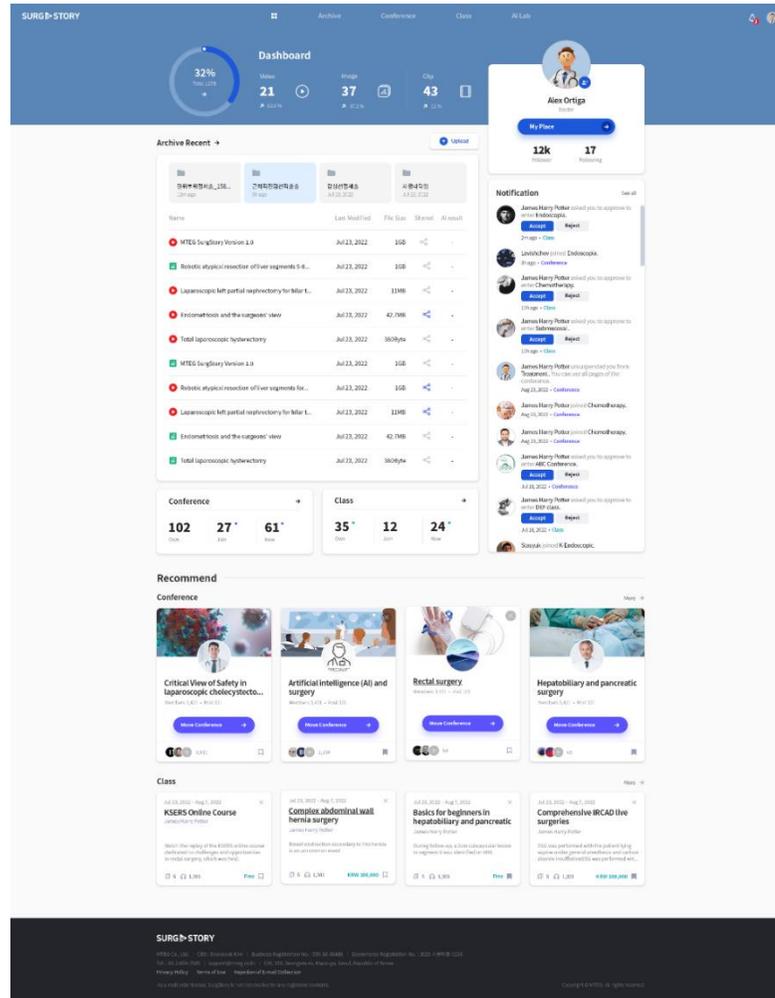


CLASS
Edu

AI LAB
AI Development

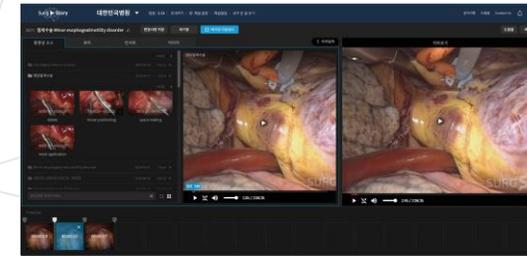
Private Data Archive

Offer high secure Personal data management and video editing tools



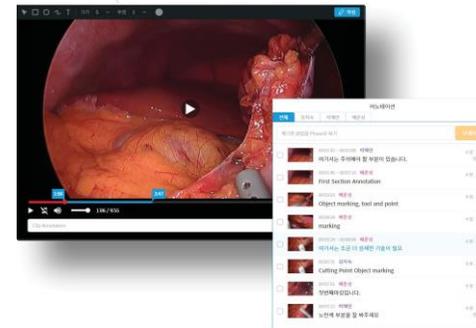
Web editing Studio

Drag & Drop easy video editing and creating contents



Annotation

Selecting section of the video and saving with annotation



Optimization for the Video based surgery education - CLASS

Generating Class for the education and capable of Bi-directional education

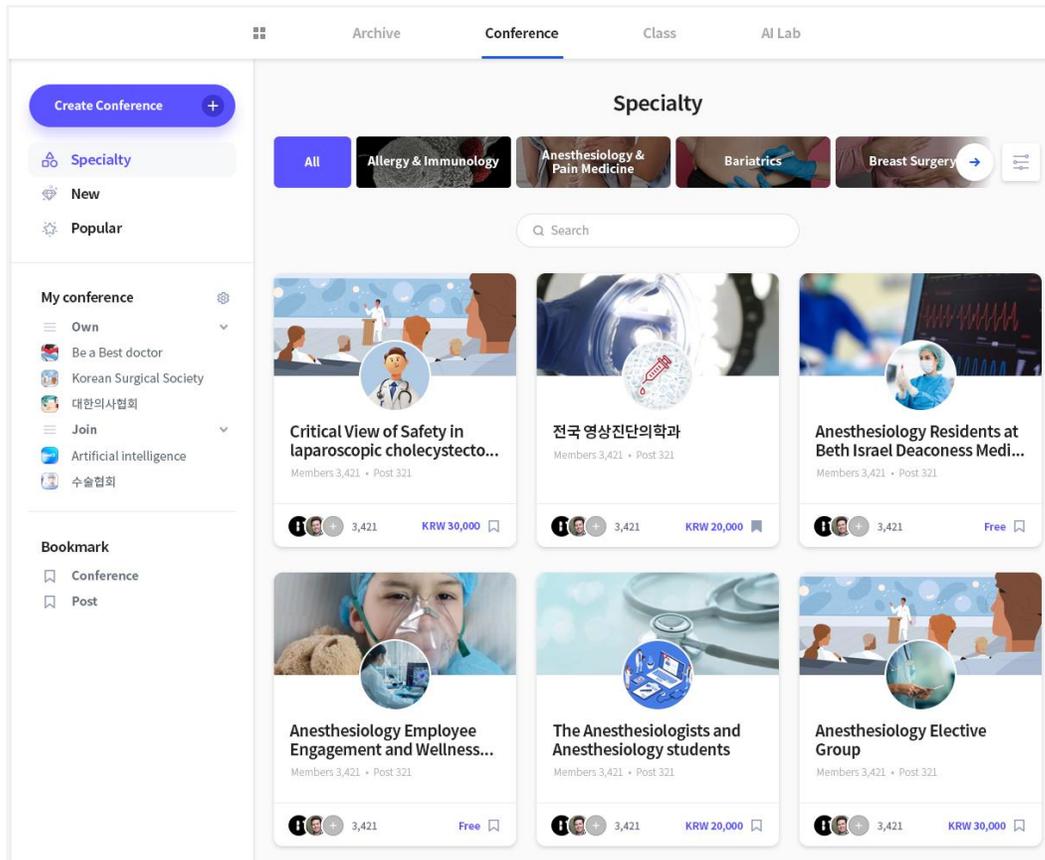
Personal Class

The screenshot shows the 'Class' page interface. At the top, there are navigation tabs: Archive, Conference, **Class**, and AI Lab. A search bar is located below the navigation. On the left, there is a sidebar with a 'Create Class' button and categories: Category, New, and Popular. Below the sidebar, there are sections for 'My Class' (Own and Join) and 'Bookmark'. The 'Own' section displays three class cards: 'Stanford Medcast Episode 21: Hidden and Here Mini-Series P...', 'KSERS Online Course', and 'All About You Family Medicine'. The 'Join' section displays two cards for 'Stanford Medcast Episode:Hidden and Here Mini-Series Part 4'. The 'Bookmark' section shows three cards with video thumbnails.

The screenshot shows a detailed view of a 'Personal Class'. The top navigation is the same as the previous page. The main content area features a video player with a play button and a 'Taking class' button. The class title is 'Stanford Medcast Episode:Hidden and Here Mini-Series Part 4' by Prof. Jung, with a duration of 'Jul 23, 2022 - Aug 7, 2022' and a price of 'KRW 50,000'. Below the video player, there are tabs for 'About', **Curriculum**, 'Discussion', and 'Members'. The 'Curriculum' tab is active, showing a list of chapters: '1. Family medicine', '2. Community medicine', '3. Internal medicine', '4. Research methodology', and '5. Otolaryngology'. The '1. Family medicine' chapter is expanded, showing a description and attachments. The 'Sub chapter' section shows '1-1. What is family medicine?' and '1-2. The Speciality of Family Medicine'.

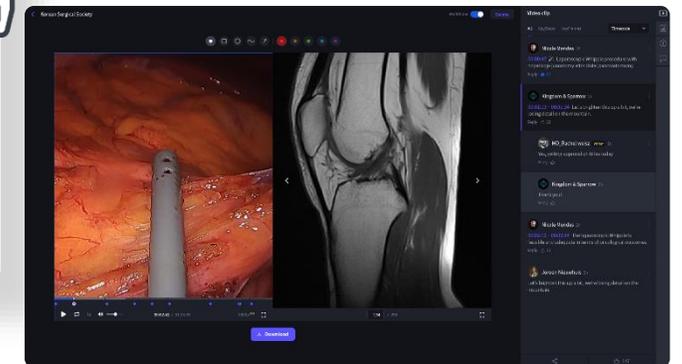
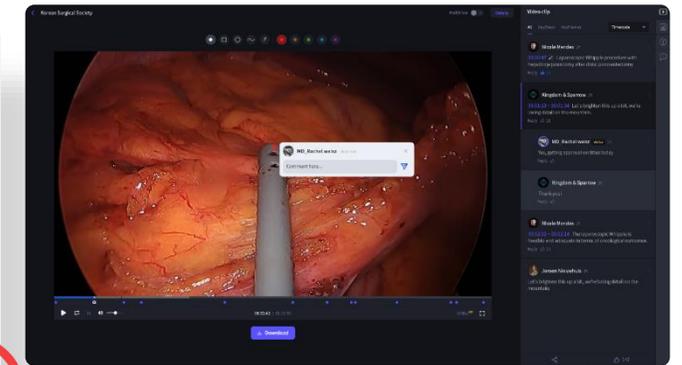
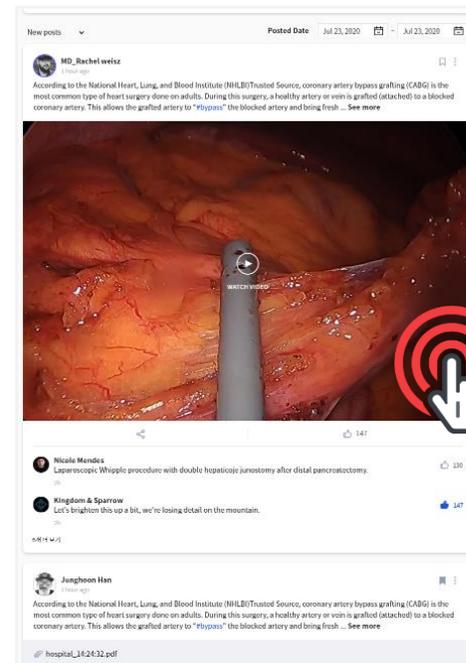
Multi-Purpose research group support - CONFERENCE

Open/Closed independent medical conference creating. Sharing and real-time feedback community



Screen marking feedback

Feedback through video annotation
Check video and picture with the Multiview.



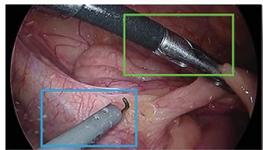
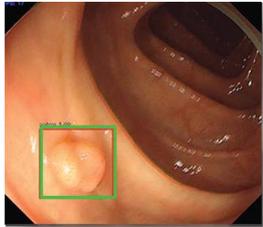
Individual AI Data Development

Offering report by analyzing medical behavior with AI technology

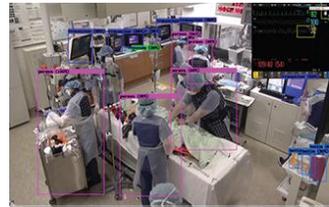
AI ANALYTIC

AI based auto medical behavior analysis

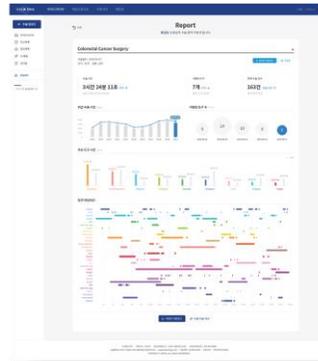
AI automatically analyze input video producing meaningful output data. Case by case report can be evaluated with data comparison.



Surgery, Laparoscopy

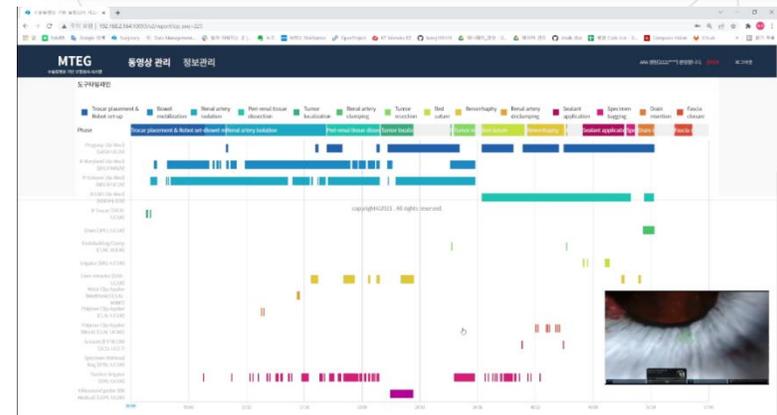
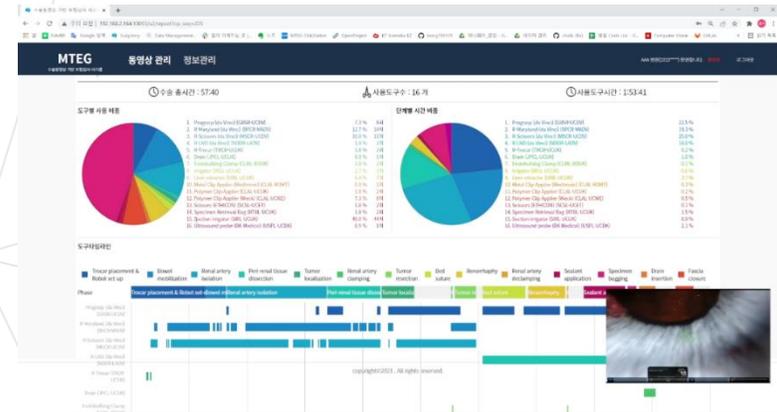


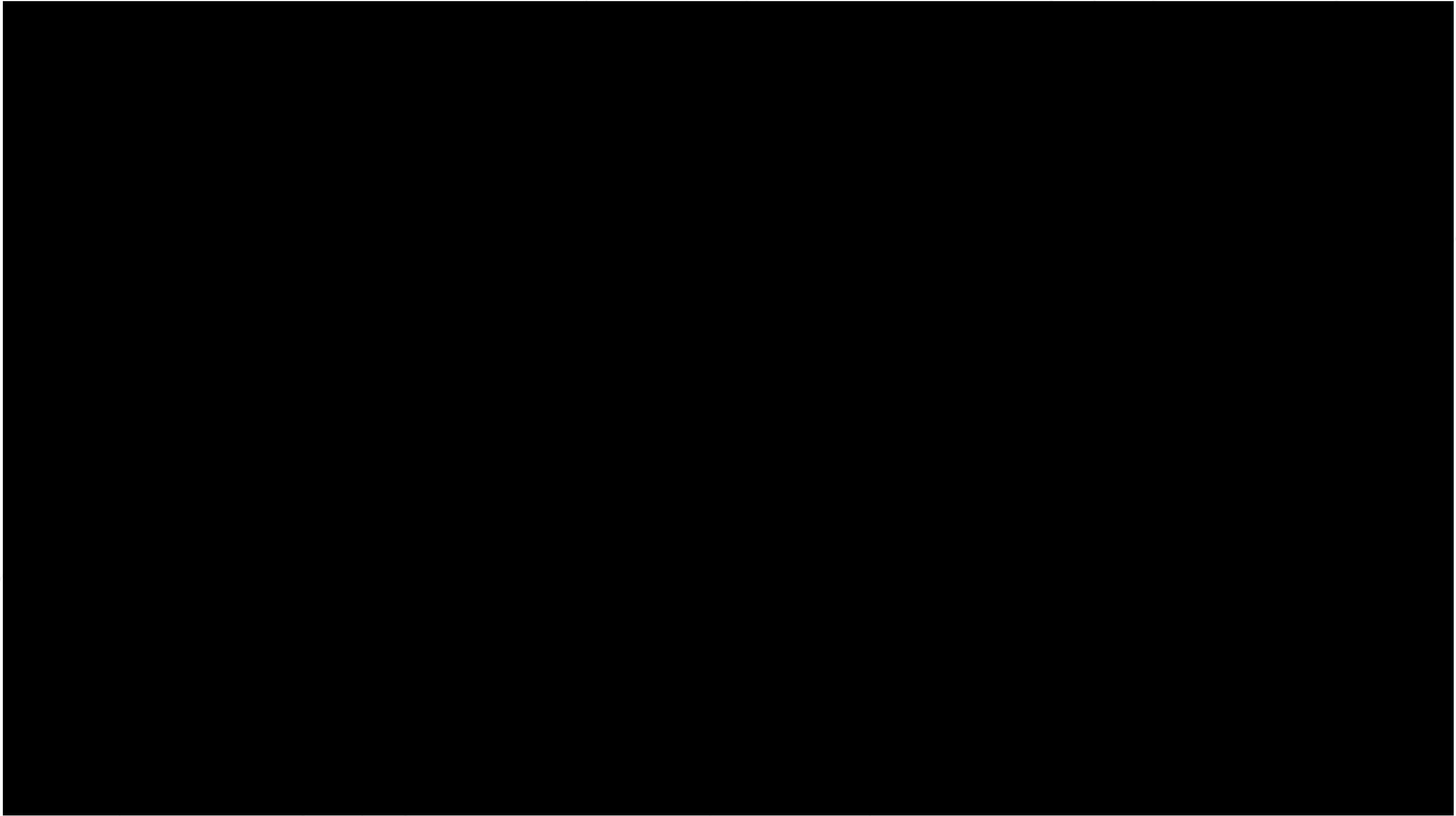
TQIP service



Video analysis report

AI Report Example





A.I TECHNOLOGY

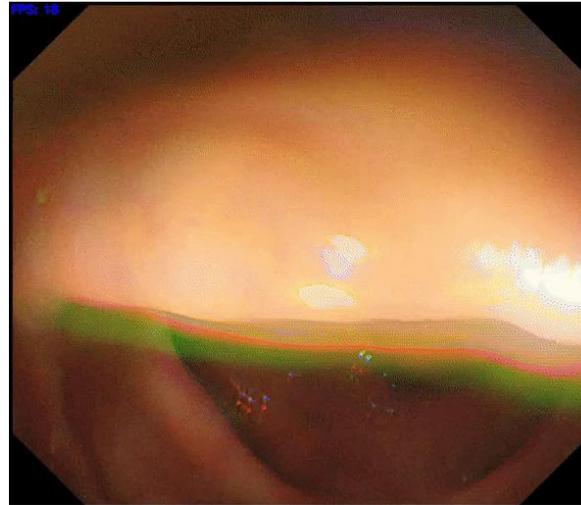
Contribution toward medical act dataization through AI medical data processing technology.

We can develop digital assets from the doctor's knowledge and expertise through automated dataization of major surgical instruments, lesions, organs, and events.

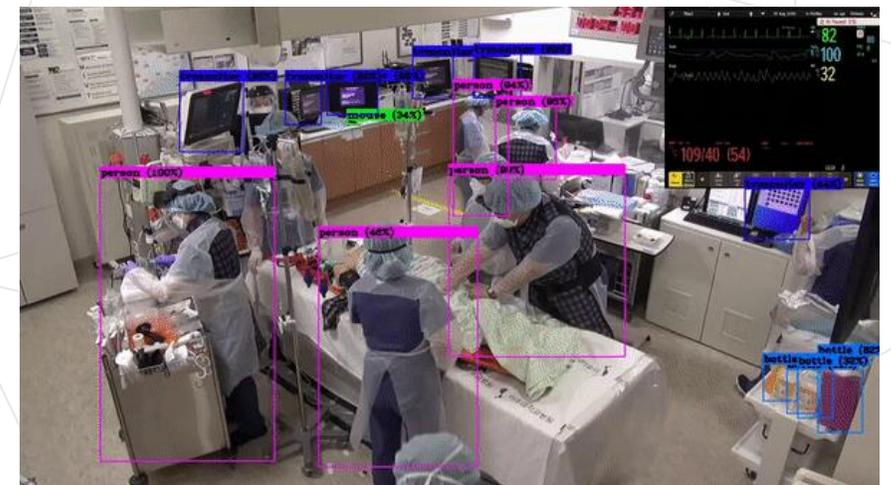
Surgical Videos



Laparoscopic videos



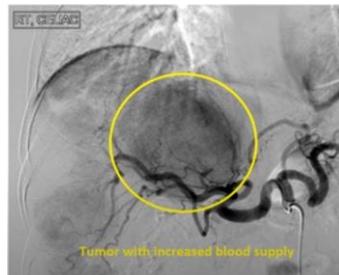
Trauma center medical behavior



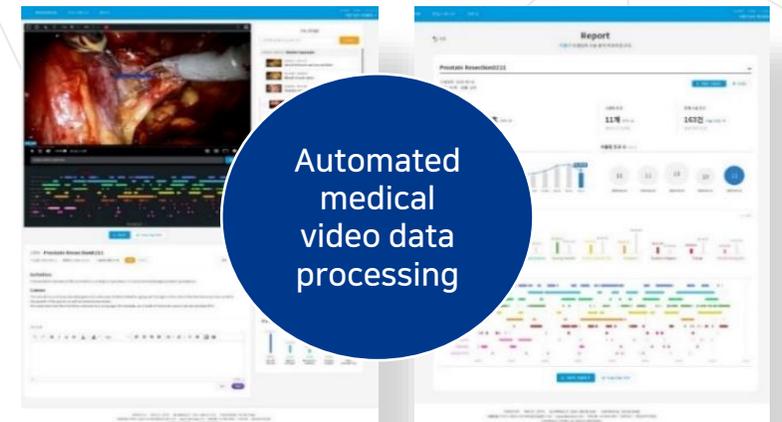
Ultrasound Videos



Intervention



Rehabilitation



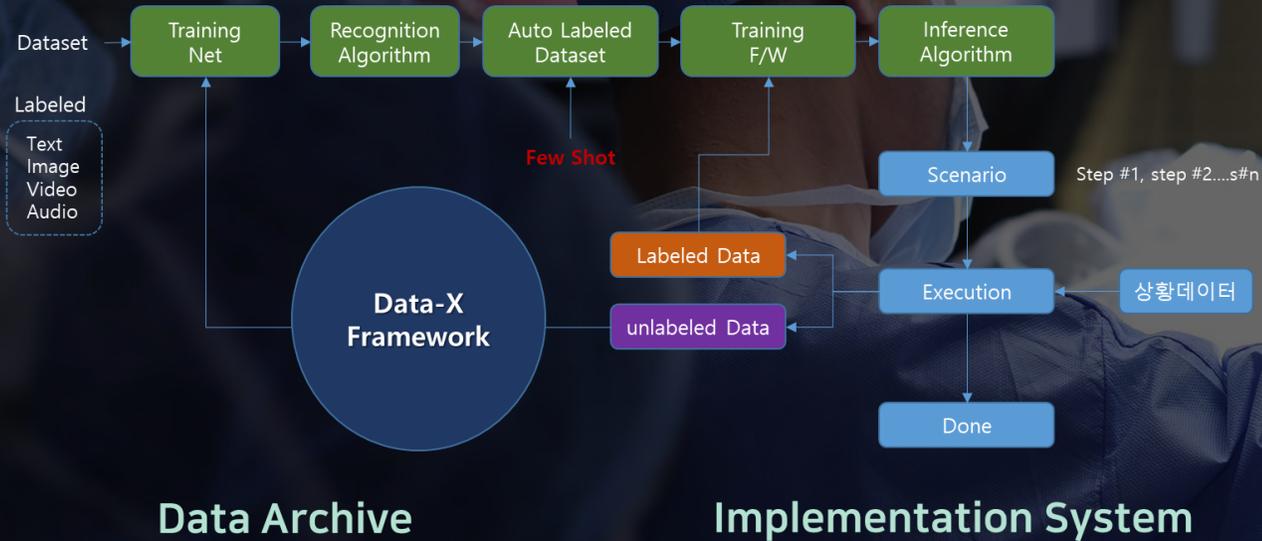
Automated
medical
video data
processing

A.I TECHNOLOGY

Data - X Framework

By the data feature, AI performance can be modified and verified by the evolution stage.

User Visible Data Archive & Implementation System



Enterprise

AI

Explainable, Trustworthy, Commonsense and Knowledge based, Meta-learning, competency aware based AI R&D

Academic
AI

Low Trustworthy
Hard to explain

MTEG Co., Ltd. Aims for assetization supplying intelligent medical video archive solutions



“

Personal videos are industrialized, but what about the medical videos?

CIEO
Deokseok Kim

Chief Innovation Executive Officer

Awards



- BA in Nuclear Engineering, Hanyang University (1993)
- 1993~1999: Daewoo Co., Ltd. - Automobile export planning
- 1999~2000: Established Auto Plus Co., Ltd.
- 2001~2004: **Founded Markettizen (Consulting)**
 - GNG networks game business strategy consulting
 - Small and medium business IT strategy (marketing & biz) consulting
- 2004~2006: **Marketforce Consultant**
 - IT strategy consulting (Ministry of Science and ICT, ICA overseas strategy consulting)
 - Overseas investment for Gyeongsangbuk-do Province, overseas strategy for Gyeonggi-do province
- 2006~2011: **CEO of Code Act Co., Ltd.**
 - Developed and provided media technology and solutions
 - Developed Korea's first video NLE editor "Greditor"
 - Received "President's Award" in 2009 at the Korea Software Competition
 - Received NIPA's "Best Project Research Award" in 2009
- 2011 ~ 2015: **New media marketing education (National Assembly, education office, schools, universities, government offices, etc.)**
 - Authored "A study on the implementation plan of the Korean wiki government to reinforce communication with the people"
 - <2011 Presidential Committee on National Information Strategy>
- 2013~2016: **Adjunct Professor, Department of Convergence Software, Hallym University**

Major Member



SungWook Chung Vice.CEO / CSO

- Tokyo Univ. PH.D of Dept. Pharmacy
- WonIK VC Chief Analyst
- Stem on CEO
- Prof. Yonsei Univ



Bokyoung Choi Board Member / AI team

- Seoul National Univ Electronic Undergraduate
- Postec PH.D
- U.S Alamos research center
- Research Prof of Vanderbilt Univ
- Jeju Hanla Univ chief of the intelligence system dept



Bongsik Yoon Vice CEO/ Chief of Hospital business

- Master of Aju Univ Computer engineering
- Asan hospital, Infinity healthcare
- Dreamwell(PACS) CEO



Juunhoon Kim Board Member / AI team lead

- PH.D Chunang univ multimedia engineering
- Chips and Media, Daum
- Media expert CED



Junhyuk Park Board Member / System Developer

- Chosun Univ Chemistry
- Head R&D of Credoway, Docple



Juhung Kang GM / Data, Business strategy

- Hankuk Univ of Foreign Studies Computer engineering
- Crosstech CEO
- Yeolim tech Executive director



JiSuk Kim Conductor / UX/UI team lead

- Digital univ industrial design
- 10yr of design agency



JunHee Lim Conductor / Management lead

- Gwanju healthcare univ Hygiene and environment
- Operation support management 25yr
- Account, Human resource, Gov R&D, Business management



Jaekyung Kim Conductor / Data lead

- Master of Sungsil univ contents engineering
 - KAIST EMBA
 - 13Yr IT industry
 - Business planning, Business strategy, public PM
- Data analysis, BM analysis

Advorsy (M.D, Medical Engineering)

| Name | Belonging |
|-----------------------|--|
| Prof. KwangKi Kim | Director of Medical device center, Gachun Gil Hospital |
| Prof. Changhu Choi | Gachun Gil Hospital Chief of Thoracic surgery |
| Prof. Changwook Chung | SNUH Dept. Urology |

| Name | Belonging |
|---------------------|---|
| Prof. Sungwoo Cho | SunchunHyang Seoul (Colorectal) Surgery |
| Prof. JungMyun Kwak | KUAH (Colorectal) Surgery |
| Prof. Hyuksoon Choi | KUAH Gastroenterology Surgery |

| Name | Belonging |
|--------------------|---|
| Prof. Junwon Jung | Gachun Gil Hospital Gastroenterology center |
| Prof. Hyunil Kim | Yonsei Severance (Gastrointestinal) surgery |
| Prof. Sungsoo Park | KUAH (Gastrointestinal) surgery |

| Name | Belonging |
|------------------------------|--|
| Department head Daegeun Song | Viewisnamuh Hospital Kidney surgery |
| Prof. KwangMin Park | (former)Asan Hospital Chief of Annals of Hepato-Biliary-Pancreatic Surgery |
| | |

For the best Companion and supporter of
the next generation of medical AI technology,
MTEG will be there for you

Thank you.



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