DIGITAL HEALTHCARE

Digital/Smart Healthcare Solution

- Medical A.I. Software for Early Tumour Detection
- Robotics A.I. Biopsy System for precise Biopsy
- A.I. Pathodology & Telepathodology
- robotics for Telehealth / Telemedicine solution

Medical Artificial Intelligence Market Analysis

Pathological artificial intelligence

In 2016, there were about 9,000 professional occupational pathologists in China with a gap of 4-9 million. The need for pathological diagnosis increases year by year. The huge market demand requires artificial intelligence to compensate for this imbalance in supply and demand.

CT image artificial intelligence

Lung cancer in China accounts for the highest incidence of all malignant tumors and deaths.The chest Low Dose CT radiograph technique is an effective method for early screening of lung cancer. Because low-dose CT radiation is small in developed countries, it has been listed as a routine physical examination item of the year with high number and frequency, but due to the large number of CT scan images (usually more than 200 CT scans), doctors have a long diagnosis time. With a large workload, it is easy to fatigue, artificial error is inevitable. Artificial intelligence assisted diagnosis can greatly improve the diagnostic efficiency and accuracy.

The annual demand for cancer diagnosis in China will increase by 35%-50%, and by 2025 there will be a gap of 14,900-35,600 in the pathology/radiology department. Over 60.7% of pathologists are over the age of 55, and the growth rates of pathologists and radiologists are far below the clinical requirements.

Digital Pathology or Radiology ??

Potential solution to the experts shortage

- Addressable market size: USD979 Million
- CAGR: 11.5% (2016-2011)
- Expert shortage:

2025: 14,900-35,600 shortage of physicians

10.4% decrease in active physicians pathology in 2008 – 2015

60.7% of active physicians in pathology are age 55 or older

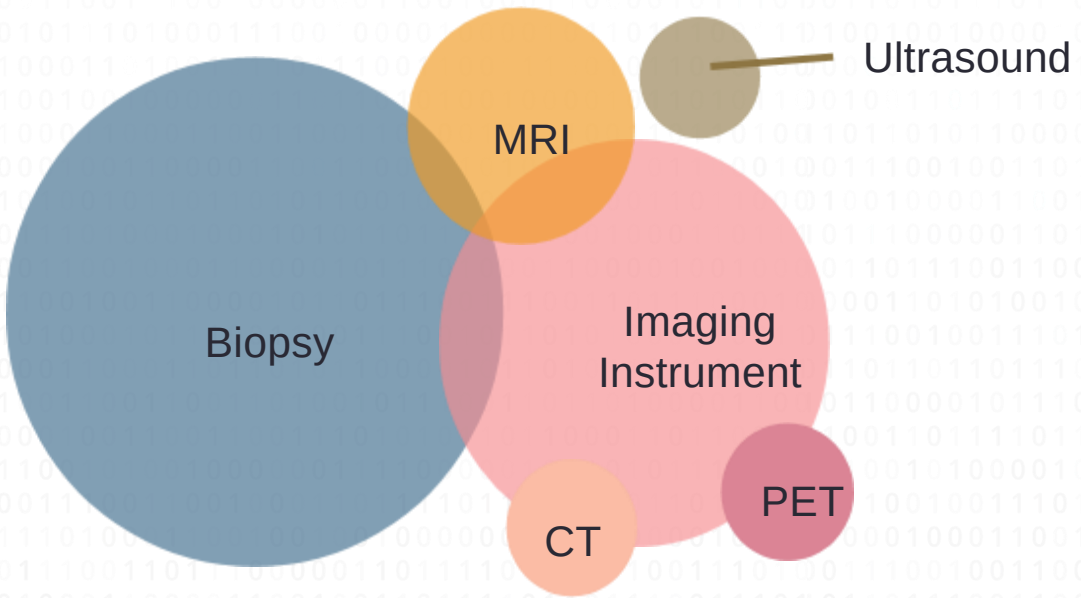
Time required delays decision making pathology

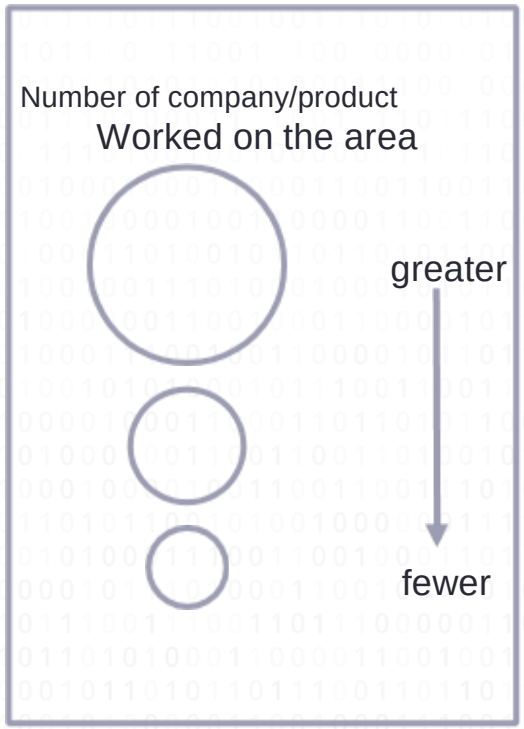
	U.S.	China
Pathologists to patients	1:2000	1:70,000
Cancer Growth Rate	-2%	4%
Demand for cancer diagnosis	4%	35-50%
# of pathologists	0-1%	4%

Source:

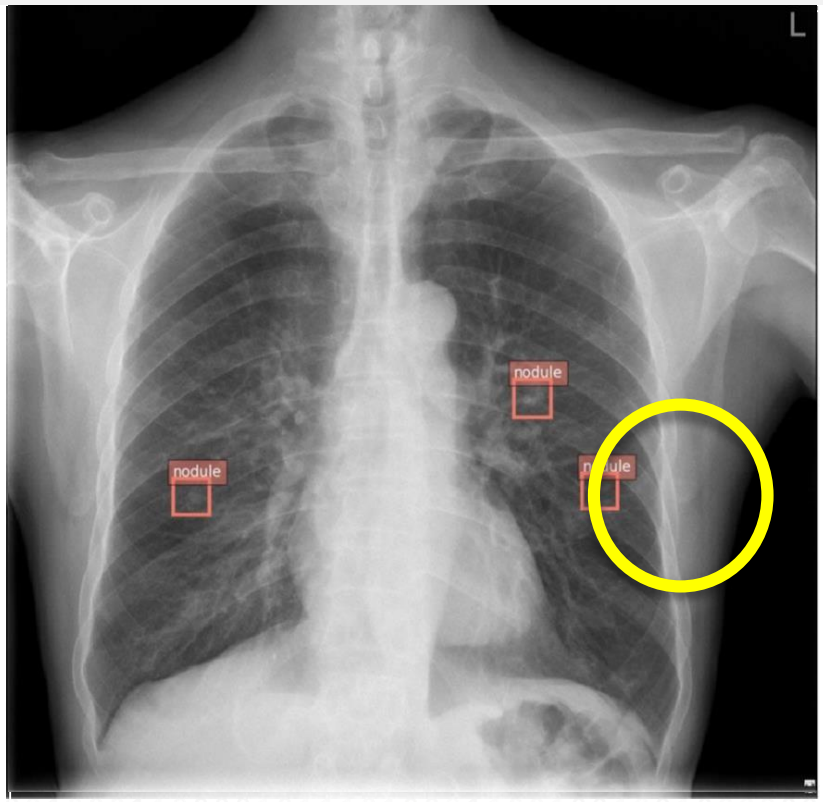
- World Health Organization -World Cancer Report 2015
- US figures -AAMC 2015

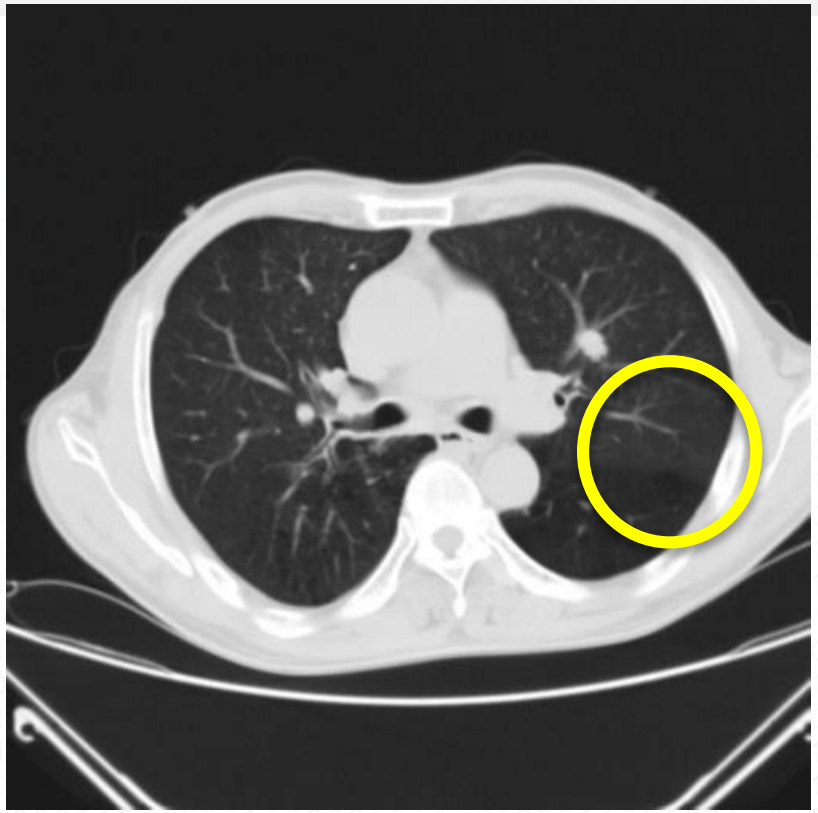
Digital Diagnostic Market, by product (instrument based)





A.I. for Early Tumor Detection





X-ray report inspection system detects missing lung nodules in the doctor's report. CT scan results show

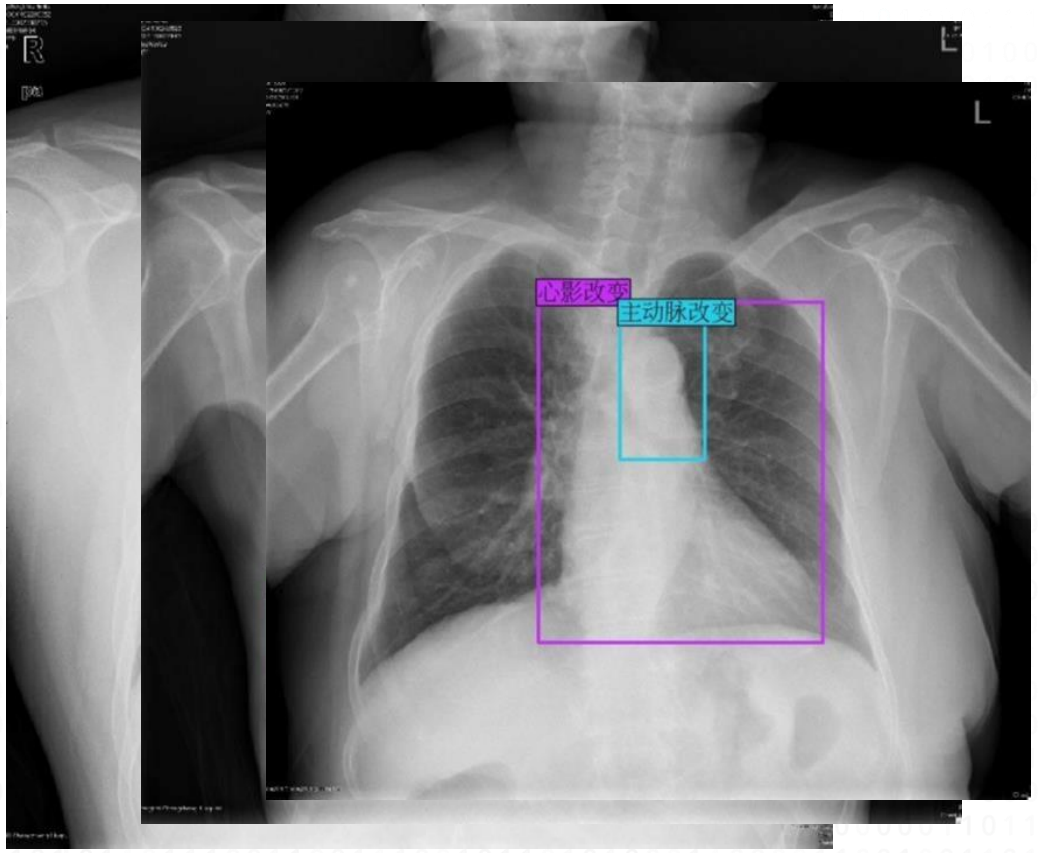
“A nodules were seen in the anterior segment of the upper lobe of the left lung, with a long diameter of about 1.5 cm. The boundary was clear."

A.I. for Early Tumor Detection

“2 nodules are seen in the lung, with a long diameter which can be measure”

Intelligent X-ray screening

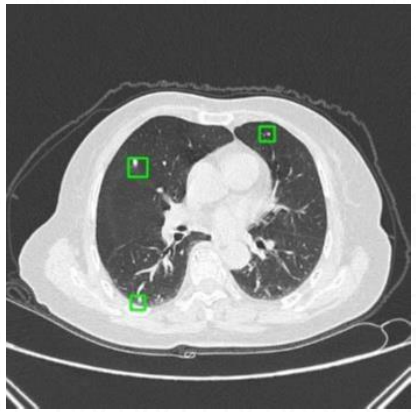
The model can detect more than 20 diseases with nodules
Model analysis time: 0.05s
Model sensitivity: 91%



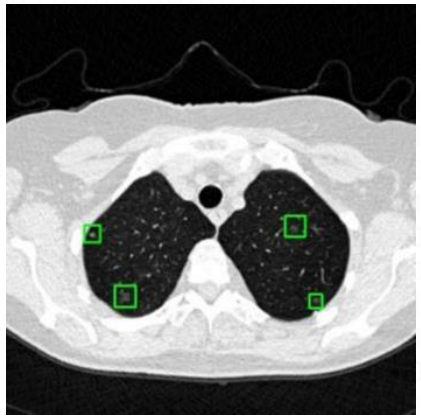
X-ray assisted diagnosis model can quickly identify the presence of lesion images, Lesion location, including 5mm pulmonary nodule (thoracic surgery specialist recommended surgery The smallest pulmonary nodule size) helps the doctor to increase the reporting efficiency

Intelligent CT Assisted Screening

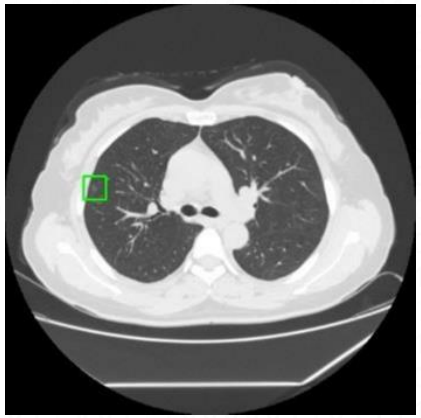
CT



Multiple nodules

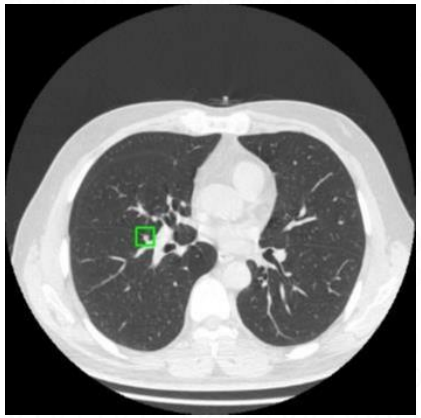


Multiple ground glass



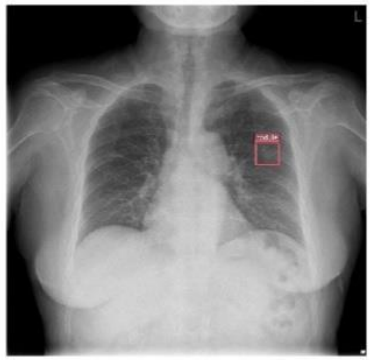
Lightly ground glass

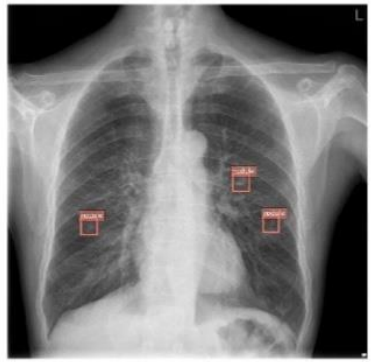
Tiny nodules



Paravascular nodule

X Ray

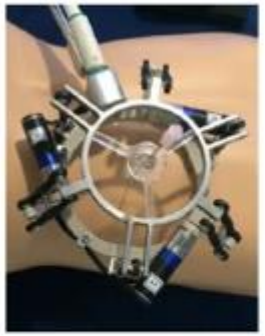




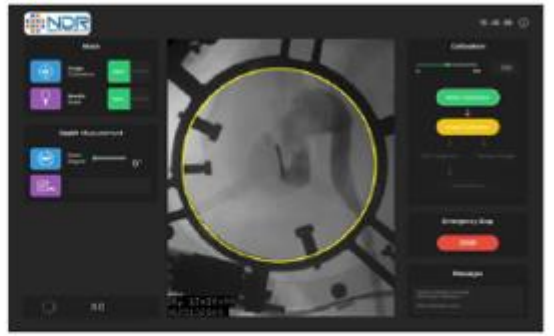
A.I. Surgical Robotics for Needle Targeting

World 1st Robotics System with A.I. & Image Processing for Automated Lesion Targeting

- Robotics System with A.I. Control Algorithm
- Image analysis for Calibration and automated positioning
- Real time image extraction using existing imaging modalities
- Image guided Minimally Invasive Surgery (MIS)
- Auto aligning needle to target 3D spare with precision
- For Lesion Biopsy, Tumor Ablation

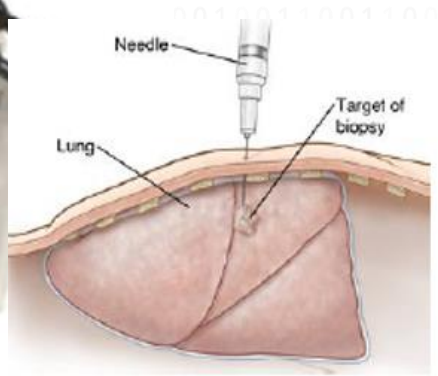


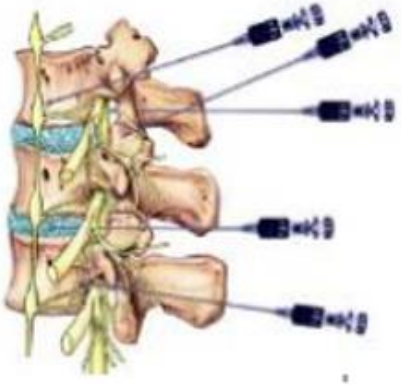
Hardware
Delta Robot



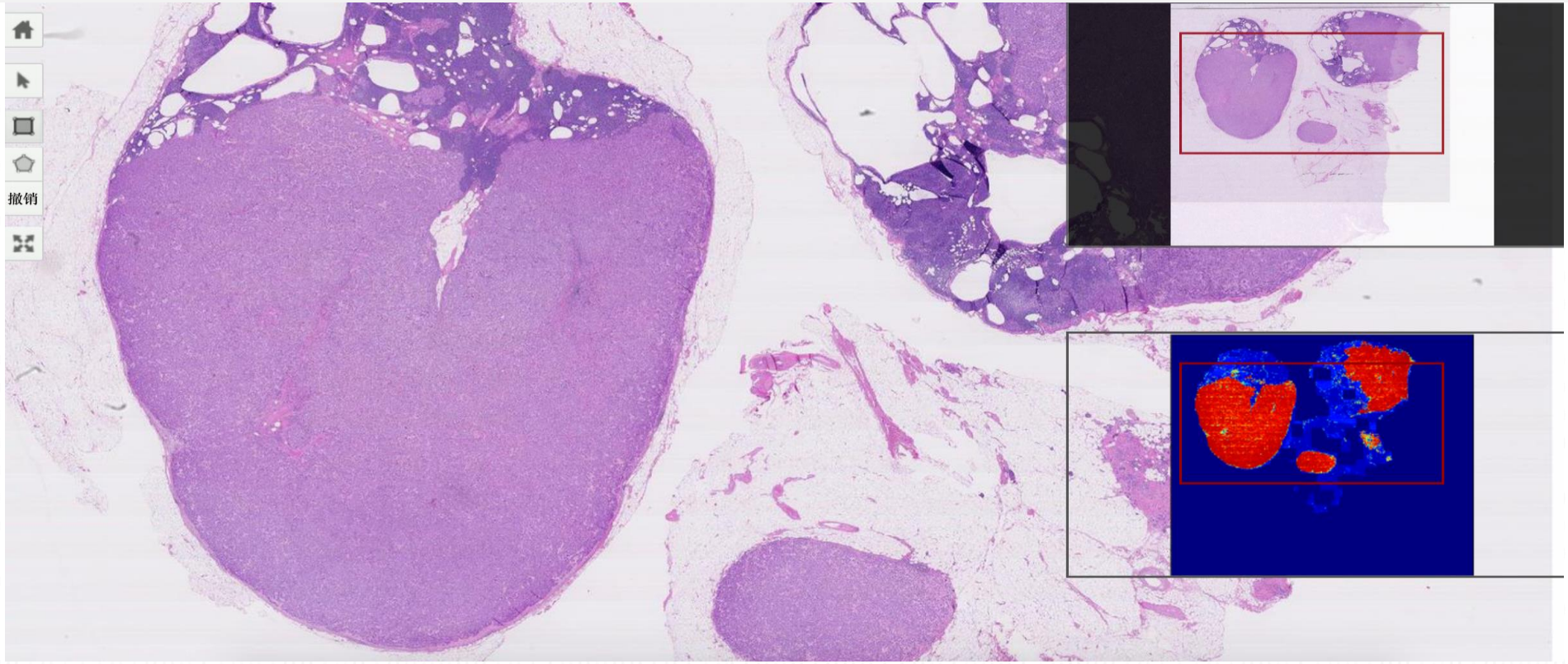
Software Image
Analysis & Tracking

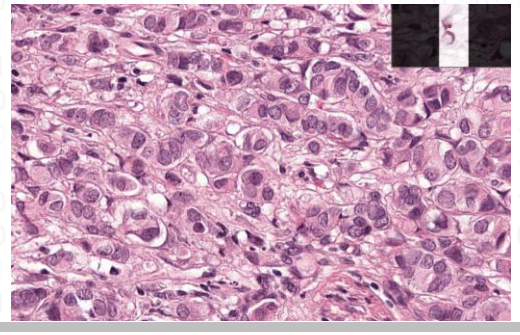
- Non Disruptive to surgical procedure, reduce radiation time exposure with pin point accuracy





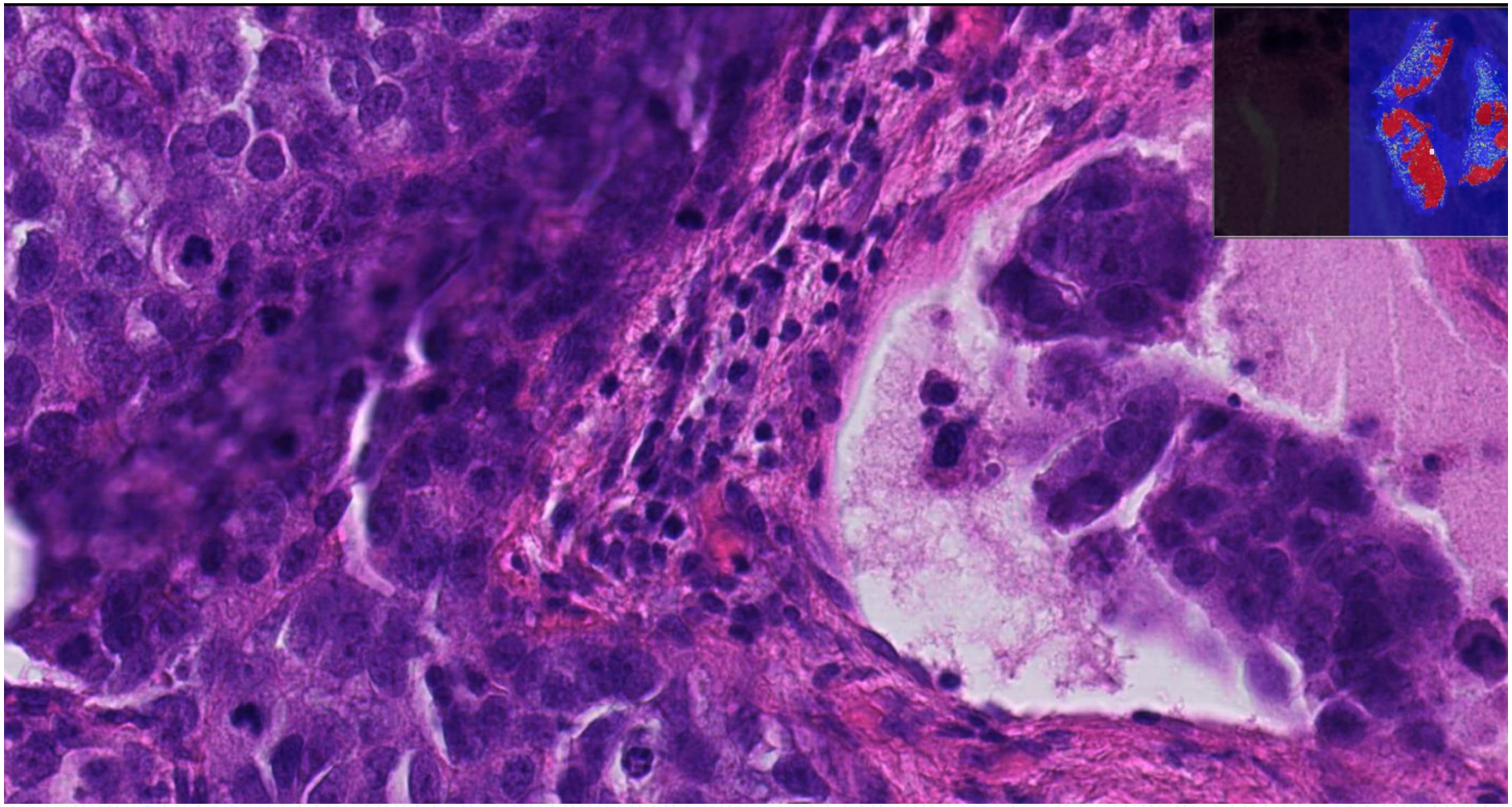
Intelligent Remote Pathology Diagnostic Platform





- Platform supports browser online analysis of pathological sections
- Unique pathological image processing technology
- Handling single file sizes from hundreds of megabytes to tens of gigabytes
- Undistorted Single slice file

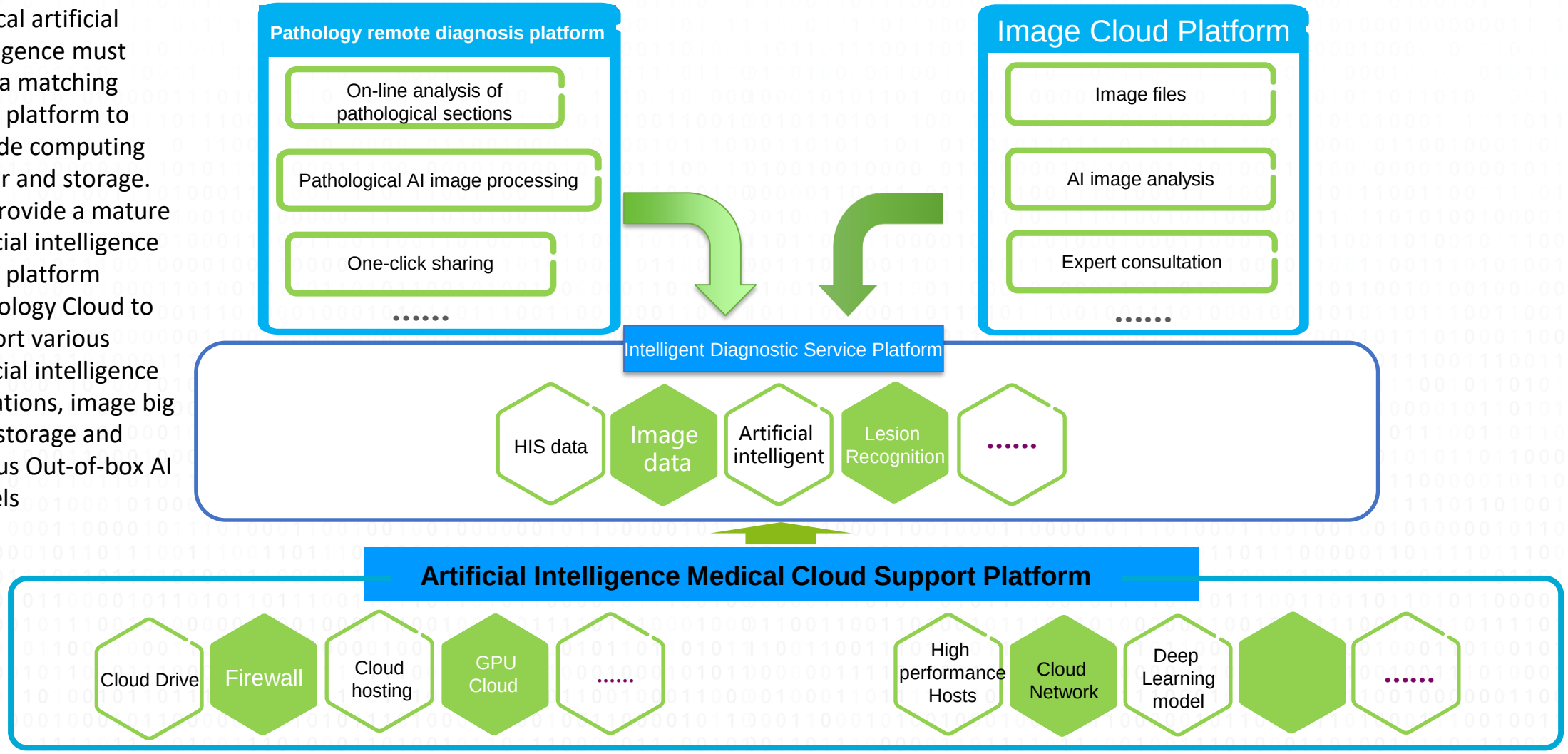
Intelligent Remote Pathology Diagnostic Platform



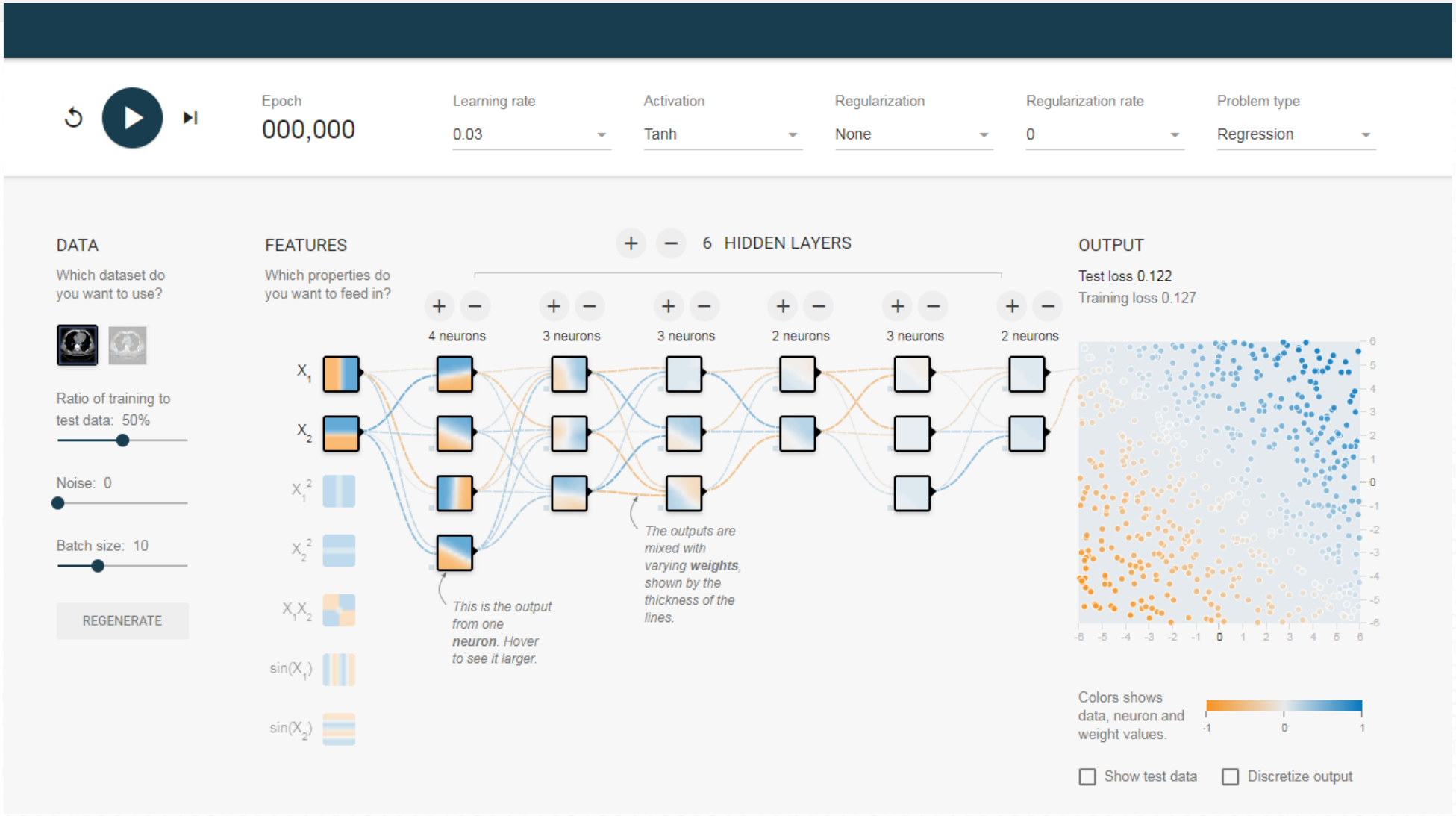
- Digital Tele Pathodolody

AI Smart Image Cloud Platform: Deepology Cloud

The landing of medical artificial intelligence must have a matching cloud platform to provide computing power and storage. We provide a mature artificial intelligence cloud platform Deepology Cloud to support various artificial intelligence operations, image big data storage and various Out-of-box AI models



AI Smart Image Cloud Platform



Make scientific researchers who do not have a computer programming foundation able to complete “one-click” deep learning modelling and research

SANfinity

AI Smart Image Cloud Platform Features

- Connect the in-hospital imaging department through the PACS system to meet the needs of mobile reading and expert consultation.
- Reduce storage costs by 50% through unique compression algorithms and advanced hyper-convergence storage, greatly reducing the storage cost and availability of ever-increasing image data
- To provide artificial intelligence analysis of image capabilities, such as: lung nodule artificial intelligence analysis.

Industrial Model: Artificial Intelligence Medical Cloud

Traditional / new hospital

Using Model Services and High Performance Cloud Computing

Provides AI models and AI computing capabilities to help smart medical companies quickly build AI environments and achieve smart business quickly

Docking Medical AI Algorithm Company/Expert Turns AI Models into Services, Trains Models, Incubates New AI Medical Companies

Third-party laboratory

Input data for the platform, using models and cloud computing capabilities to make traditional business AI

Medical data

High-performance cloud computing

AI model/algorithm

Output AI model

Training AI models using data/computational capabilities, and providing models to the left-side medical institutions through paid platforms

Self-study model

Third-party AI companies

Smart medical applications

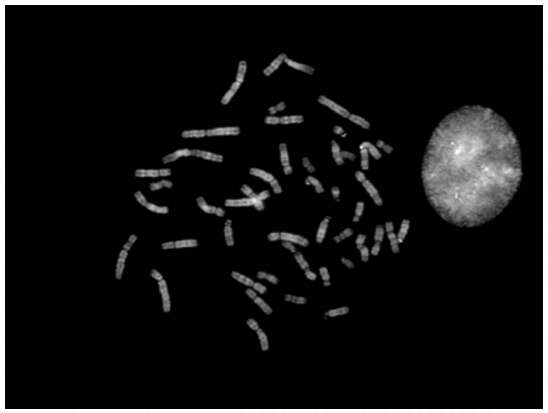
Using models, computing power to create smart medical new business

Training AI models with data/computation capabilities, incubating new AI companies

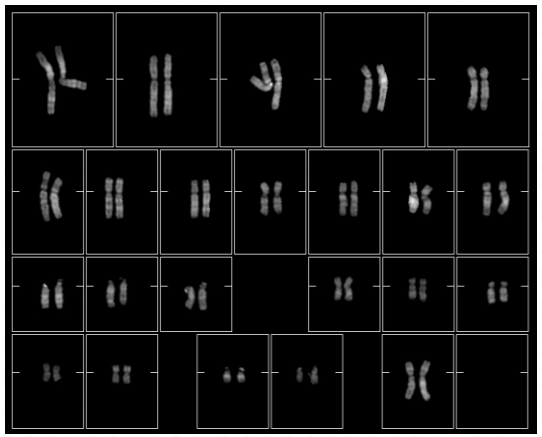
Third-party AI experts

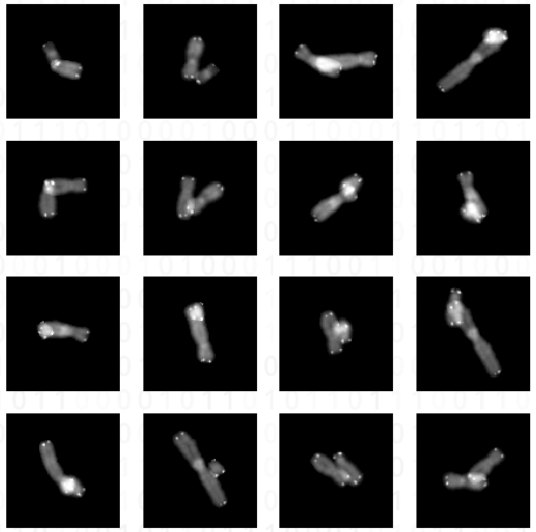
SANfinity

Other Artificial Intelligence Solution

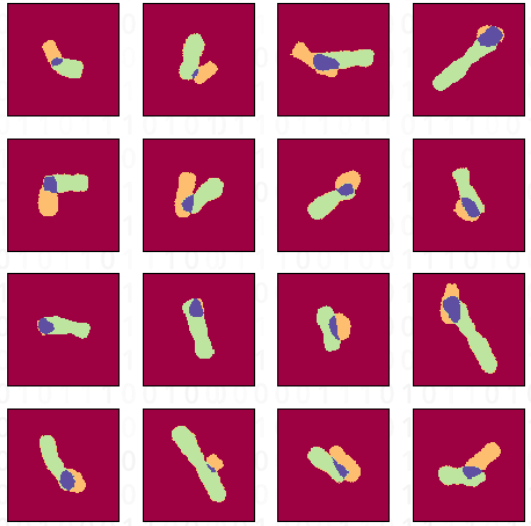


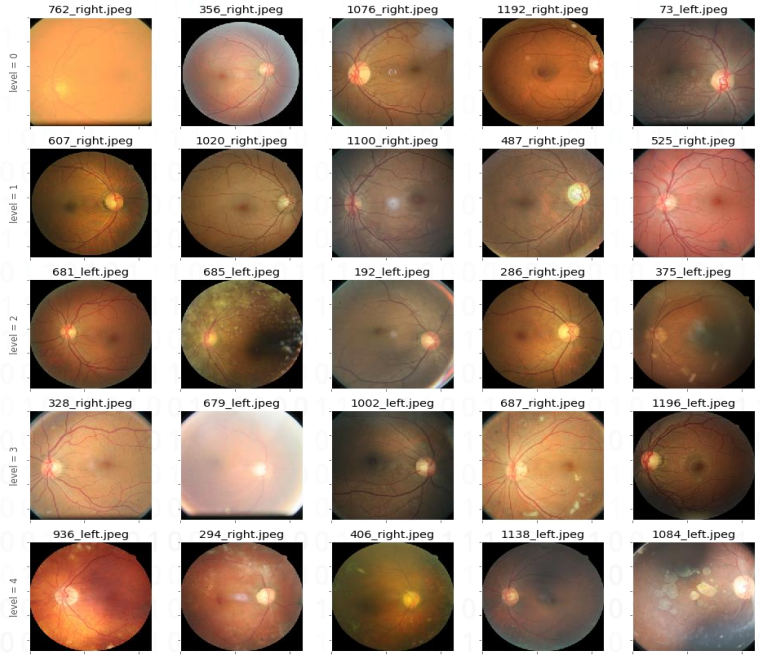
Chromosome recognition





Chromosome overlap recognition





Diabetic retinopathy

Intelligent Medical Diagnostic Imaging Cloud Machine

Intelligent medical diagnostic imaging machine

- Provide medical image AI analysis to assist hospital to quickly and accurately obtain analysis results
- Perfect combination of high performance deep machine learning image algorithm and custom hardware
- One-click sharing of video resources within the organization
- Cross-regional remote consultation
- High-performance image processing hardware
- Support massive cloud data backup
- Support online algorithm upgrade, continuous precision diagnosis and treatment