

# Considerations on cloud-based AI4H

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# Meet Alibaba Cloud

- As a business unit of Alibaba Group (NYSE: BABA), Alibaba Cloud provides a comprehensive suite of global cloud computing services to power both our international customers' online businesses and Alibaba Group's own e-commerce ecosystem. In January 2017, Alibaba Cloud became the official Cloud Services Partner of the International Olympic Committee.

By harnessing, and improving on, the latest cloud technology and security systems, we tirelessly work towards our vision - to make it easier for you to do business anywhere, with anyone in the world.

No. 3

Global Market Share ⓘ

1M+

Paying Customers

2,500+

CDN Nodes Worldwide

200+

Countries and Regions

58

Availability Zones

20

Global Regions

# Architecture of AI4H



## Various Application in Artificial Intelligence for health

Intelligent triage

Medical imaging

Symptom Check

Drug development

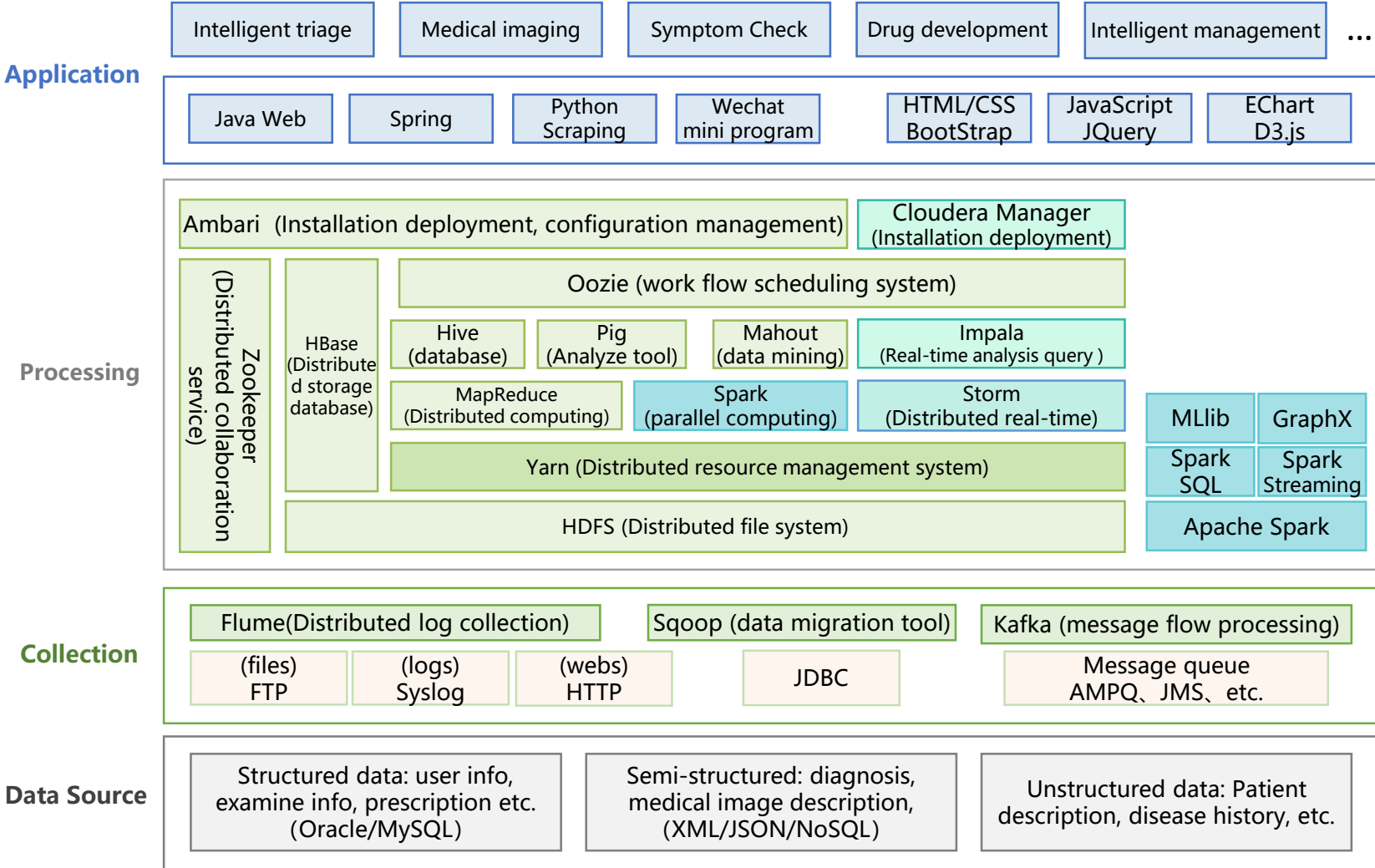
Intelligent management

...

# Whole Architecture of AI4H



## Various Application in Artificial Intelligence for health



# DATA & AI LANDSCAPE 2019

### INFRASTRUCTURE

#### HADOOP ON-PREMISE

cloudera Hortonworks  
MAPR Pivotal  
IBM InfoSphere  
jethro

#### HADOOP IN THE CLOUD

aws Microsoft Azure  
Google Cloud  
SAP Cloud Platform  
IBM InfoSphere BigInsights  
arm  
Doble CAZENA

#### STREAMING / IN-MEMORY

Amazon Kinesis  
databricks  
SAP Cloud Platform ORACLE  
confluent  
streamio hazelcast GridGain  
GIGASPACEs WallarooLabs FASTDATA lok

### ANALYTICS & MACHINE INTELLIGENCE

#### DATA ANALYST PLATFORMS

Microsoft pentaho alteryx  
Digital Reasoning  
guavus AYASDI  
ATTIVO Datameer incorta  
interana MODE ENDOR  
sisu switchboard Starburst

#### DATA SCIENCE PLATFORMS

IBM databricks dataiku  
DOMINO rapidminer TIBCO  
ANACONDA SAS  
KNIME MathWorks

### APPLICATIONS - ENTERPRISE

#### SALES

emilar CHORUS  
INSIDESALES.COM peopleai  
conversica  
clari aviso tact.ai TROOPS  
fuse/machines Clearbit

#### MARKETING - B2B

RADIUS App Annie  
EVERSTRING Lattice  
MINTIGO sense  
tubular  
JE N G A G I O  
KNOTCH mpe

#### MARKETING - B2C

zeta bloomreach SendGrid  
Inzage ACTION BLUECORE  
CONTENT SQUARE TEALUM  
Amplero amperity QUANTIFIND  
Simon Lyfca PERSADO  
remesh

#### CUSTOMER EXPERIENCE / SERVICE

qualtrics MEDALLIA SurveyMonkey  
CLARABRIDGE zendesk Kustomer  
INTERCOM Drift EVERFLEXION Gainsight  
HEAP Amplitude Watson Assistant  
DigitalGenius ASAPP ada AUTOMAT ahni  
CaDesk metomi

#### ENTERPRISE PRODUCTIVITY

slack ORACLE  
GURU lumia  
DIFFBOT clara  
talla Kasisto

#### NoSQL DATABASES

Google Cloud aws  
ORACLE Microsoft Azure  
mongoDB MarkLogic  
Couchbase DATASTAX  
redislabs  
AlangoDB SCYLLA

#### NewSQL DATABASES

SAP Clustrix  
Pivotal  
MEMSQL Influxdata  
Cockroach Labs  
VOLDB splice  
paradigm

#### GRAPH DBs

neo4j  
Amazon Neptune  
IBM ORACLE  
InfoGraph  
Opentify

#### MPP DBs

TERADATA VERTICA  
IBM Data Warehouse Systems  
Cotion  
Exasol  
dremio  
Yellowbrick

#### CLOUD EDW

aws  
Google Cloud  
Microsoft Azure  
Pivotal  
snowflake  
nuclio  
Infoworks

#### SERVERLESS

Amazon SageMaker  
Microsoft Azure  
PULSAR  
nuclo  
FaaS Function Service

#### BI PLATFORMS

looker  
Domo ARCADIA DATA ThoughtSpot  
AT SCALE  
GoodData Information Builders  
MicroStrategy Kean IO

#### VISUALIZATION

+ Tableau Power BI  
SAP Google Cloud  
Lenses  
celonis  
zepl  
CHARTIO

#### MACHINE LEARNING

Amazon SageMaker  
Google Cloud  
H2O  
DataRobot gamalon  
VIZENZE ELEMENT  
deeppar.ai

#### HUMAN CAPITAL

hiQ  
Q Allyo textio  
Wondersly Stella  
Clerke entelo  
uncommon  
eat

#### LEGAL

RAVEL  
EVERLAW  
DISCO kira  
JUDICATA  
IRONCLAD  
RiSS  
casetext

#### REGTECH & COMPLIANCE

BigID  
text IQ  
PARTNERSHIPS  
INFOSUM  
DATA REPUBLIC

#### FINANCE

anaplan  
Zuora  
SAP  
TRADESHIFF  
SCALE FACTOR  
pilot

#### BACK OFFICE AUTOMATION & RPA

UiPath  
blueprism  
VIDADO  
WorkFusion workato  
ANTWORKS  
ALKYPI

#### SECURITY

TANIMON  
CODE42 CipherCloud  
VECTRA  
pindrop  
CodeSecure  
ARAT

#### SECURITY

CYLANCE  
zscaler StackPath  
DARKTRACE ANOMALI  
DATAVISOR  
feedzai  
FORTE

#### DATA TRANSFORMATION

talend pentaho  
alteryx TRIFACTA  
tamr Paxata  
StreamSets UNIFI

#### DATA INTEGRATION

SAP Data Services  
MuleSoft  
segment enigma  
ZALANI  
Snowflake MATILLION

#### DATA GOVERNANCE

Informatica  
IBM SailPoint  
colibra  
Alation  
OKERA  
MANTA

#### MGMT / MONITORING

aws New Relic  
rubrik  
dynatrace  
splunk  
zenoss

#### COMPUTER VISION

Microsoft Azure  
Amazon Rekognition  
clarifai  
EVER AI  
UBIQUITY  
synthesis

#### HORIZONTAL AI

IBM Watson Cortana  
sentient  
Affectiva  
naraomics  
BLUE VISION

#### SPEECH & NLP

Google Cloud  
amazon alexa  
narrative science  
Moby  
SoundHound Inc.  
cogito snips

### APPLICATIONS - INDUSTRY

#### ADVERTISING

AppNexus  
critico  
ORACLE MOAT  
theTradeDesk  
TAPAD  
Applier

#### EDUCATION

Lullishoo  
Knewton  
Clever  
Clarora  
kidappra  
knowre

#### REAL ESTATE

REDFIN  
Opendoor  
VTS  
CREDIFI  
GEOPHY  
COMPSTAT  
SPACEMAKER

#### GOV'T

OPENGOV  
mark43  
LiveStories  
Passport  
SmartProcure  
STREETLIGHTDATA

#### INTELLIGENCE

Palantir  
Dataminr  
Quid  
PRIMER  
FORGE

#### FINANCE - INVESTING

KENSHU  
Quantopian  
ADDERA  
ISENTIUM  
ALGORIZ  
PAGAYA

#### FINANCE - LENDING

affirm  
JIANPUAI  
TALA  
100Credit  
TrueAccore  
MoneyLion

#### INSURANCE

Insuramo  
Anomade  
CYENCE  
Hippo  
Shift Technology  
ROOT  
CAPE

#### STORAGE

aws  
Microsoft Azure  
PURE STORAGE  
wasabi  
nimblestorage  
Quanto  
COHERITY

#### CLUSTER SVCS

Amazon EC2  
IBM  
MESOSPHERE  
packet  
CycloneCloud

#### DATA GENERATION & LABELING

amazon  
appen  
HIIVE  
Mighty AI  
LIONBRIDGE

#### AI OPS

ALGORITHMIA  
comet  
datarobot  
datmo  
Determined AI  
fidlier

#### GPU DBs & CLOUD

kinetica  
bryllyt  
PG-Storm  
FLOYDHUB

#### HARDWARE

Google TPU  
ARM  
INTEL  
GRAPHICORE  
MYTHIC  
HAYASHI  
WAVE  
SILICON WORLD  
BINXIN

#### SEARCH

elasticsearch  
algolia  
Lucidworks  
swiftype  
alphasense  
omni:us

#### LOG ANALYTICS

splunk  
sumologic  
solarwinds  
timber  
kibana  
logz.io

#### SOCIAL ANALYTICS

Hootsuite  
NETBASE  
synthesio  
bitly  
SimilarWeb

#### WEB / MOBILE / COMMERCE ANALYTICS

Google Analytics  
mixpanel  
Airtable  
SIGOPT  
granify  
custora

#### HEALTHCARE

flatiron Clover  
METABIOTA  
3D Med  
TEMPUS  
Linao  
notable  
entric  
Qventus  
INNOVACOR

#### LIFE SCIENCES

color  
Benevolent  
WUXI  
Clear Labs  
entric  
twoAR  
OWIN

#### TRANSPORTATION

UBER TESLA  
CLEARPATH  
drive.ai  
nauto  
NIO  
netradyne

#### AGRICULTURE

FARMERS  
granular  
BLUE RIVER  
FarmersEdge  
AgroStar  
FarmLogs  
TARANIS  
GAMAYA  
prosperto

#### COMMERCE

Instacart  
F.A.R.E.  
RetailNext  
FlowGood  
heuristic  
Other  
harmony  
happen  
VERDIGAS  
Electric

#### INDUSTRIAL

AVEVA SIEMENS  
PREDIX UPTAKE  
CORTEX  
TACHYUS  
SOJERN  
BOXEVER  
ZINER  
Spoke

### CROSS-INFRASTRUCTURE/ANALYTICS

aws Google Cloud Microsoft IBM SAP Hewlett Packard Enterprise SAS IOI DATA VMware TIBCO TERADATA ORACLE NetApp syncsort MAPR cloudera

### OPEN SOURCE

#### FRAMEWORKS

Spark  
Flink YARN TEZ  
MESOS  
Kubernetes  
CDAP  
Helm  
NEMO

#### QUERY / DATA FLOW

Spark SQL  
presto  
SLAMDATA  
Apache Drill  
GraphQL  
Flink

#### DATA ACCESS & DATABASES

cassandra mongoDB redis  
Cockroach Labs  
druid  
scioDB  
riak  
HBASE  
CLOUDSPAN

#### ORCHESTRATION & MGMT

talend  
Apache Airflow  
MESOS  
etcd  
Kong

#### STREAMING & MESSAGING

Spark  
Flink  
kafka  
STORM  
Apache RocketMQ

#### STAT TOOLS & LANGUAGES

python  
Scala  
Studio  
SePi Julia

#### AI OPS & INFRA

miflow  
KubeFlow  
DVC  
SELDON  
POLYAN

#### AI / MACHINE LEARNING / DEEP LEARNING

TensorFlow  
OpenAI  
theano  
VELES  
DM TK  
neon DSSTNE

#### SEARCH

elasticsearch  
Solr  
Lucene

#### LOGGING & MONITORING

elasticsearch kibana  
logstash  
fluentbit  
fluentd  
Grafana  
VECTOR

#### VISUALIZATION

matplotlib  
TensorBoard  
seaborn  
Bokeh

#### COLLABORATION

BokehX  
jupyter  
ANACONDA

#### SECURITY

Apache Ranger  
KNOX  
Sentry  
accumulio

#### HEALTH

Apple VALIDIC  
practicefusion  
fitbit GARMIN  
HUMAN API kinsa

#### IOT

GE Digital  
UPTAKE  
helium  
samsara

#### FINANCIAL & ECONOMIC DATA

Bloomberg THOMSON REUTERS  
DOW JONES  
S&P CAPITAL IQ CB RINGS  
PLAID SECOND MEASURE  
EVERETT VOOLTEX  
Gestimize PREMISE  
Quandl  
xignite Thinksum  
earnest predata

#### AIR / SPACE / SEA

Orbital Insight  
AEROBOTICS  
spire  
kaspary  
INDUSTORY  
telluslabs  
WINDWARD  
DroneDeploy  
MarineTraffic

#### PEOPLE / ENTITIES

axiom experian  
Epsilon  
Crimson Hexagon  
B.A.S.I.S  
Quantcast  
SAFE GRAPH

#### LOCATION INTELLIGENCE

FOURSQUARE  
sense360  
PlaceIQ  
esri  
factual  
CARTY  
Mapillary  
Streetline  
cuebiq Radar  
OpenStreetMap

#### OTHER

DATA.GOV  
IMAGENET  
KAGGLE  
CRUX  
iGratit.io

#### DATA SERVICES

OPERA  
fractal  
DataKind  
INNOPLXUS

#### INCUBATORS & SCHOOLS

PLURALSIGHT  
DataCamp  
DataElite  
INSIGHT  
The Data Incubator  
METIS

#### RESEARCH

facebook research  
OpenAI  
MIRI  
VECTOR INSTITUTE  
ALLEN INSTITUTE  
ARTIFICIAL INTELLIGENCE

SaaS

PaaS

IaaS

### INFRASTRUCTURE

**HADOOP ON-PREMISE:** cloudera, Hadoop, Hortonworks, MAPR, Pivotal, IBM InfoSphere, jethro

**HADOOP IN THE CLOUD:** AWS, Microsoft Azure, Google Cloud, SAP Cloud Platform, IBM Intelligent Business, ARM, Qubole, CAZENA

**STREAMING / IN-MEMORY:** Amazon Kinesis, databricks, SAP Cloud Platform, ORACLE, confluent, stream, hazelcast, GridGain, GIGASPACE, Wallaroo, FASTDATA, Iox

### ANALYTICS & MACHINE INTELLIGENCE

**DATA ANALYST PLATFORMS:** Microsoft, pentaho, alteryx, Digital Reasoning, guavus, AYASDI

**DATA SCIENCE PLATFORMS:** IBM, databricks, dataiku, DOMINO, rapidminer, TIBCO, ANACONDA, SAS, KNIME, MathWorks

**ATTIV/O:** Datameer, Incofta, interana, MODE, ENDOR, sisu, switchboard, Starburst

### BI PLATFORMS

looker, AWS, ATSCALE, Qlik, MicroStrategy, Klean IO

### VISUALIZATION

+tableau, Google Cloud, SAP, Celonis, CHARTIO

### MACHINE LEARNING

Amazon SageMaker, H2O, DataRobot, gamalon, VIZENZE ELEMENT, deepsense.ai

### COMPUTER VISION

Microsoft Azure, Amazon Rekognition, clarifai, EVER AI, deepomatic, UBIQUITY, ADEE, YITU, trax, omni-us, SINEQUA

### HORIZONTAL AI

IBM Watson, Cortana, Face++, sentient, Voyager, Affectiva, Numenta, narologies, BLUE VISION, II, Farfetch

### SPEECH & NLP

Google Cloud, twilio, Amazon Alexa, Amazon Transcribe, narrative science, semantic technologies, Movel, PRIMER, SoundHound Inc., Mindful, cogito snips, SHARPLING, LUIS, PolyAI

### SEARCH

ORACLE, elasticsearch, algolia, COVEO, Lucidworks, ATTIV/O, swiftify, EXALON, alphaense, MAANA, omni-us, SINEQUA

### LOG ANALYTICS

splunk, sumologic, solarwinds, bryltyl, BLAZENOR, FLOYDHUB

### SOCIAL ANALYTICS

Hootsuite, sprinklr, NETBASE, synthasio, trackr, simple reach, bitly, SimilarWeb

### WEB / MOBILE / COMMERCE ANALYTICS

Google Analytics, mixpanel, AMPITUDE, Airtable, RESQI, SIGOPT, granifi, CUSTORA

### CROSS-INFRASTRUCTURE/ANALYTICS

aws, Google Cloud, Microsoft, IBM, SAP, Hewlett Packard Enterprise, sas, IOTDATA, vmware, TIBCO, TERADATA, ORACLE, NetApp, syncsort, MAPR, cloudera

### APPLICATIONS - ENTERPRISE

**SALES:** CHORUS, INSIDESALES.COM, peopleai, conversica, clari, a viso, tact.ai, TROOPS, fuse/machines, Clearbit

**MARKETING - B2B:** RADIUS, App Annie, EVERSTRING, Lattice, HINTIGO, sense, tubular, JE NAGGIO, KNOTCH, mpe

**MARKETING - B2C:** ZETA, bloomreach, SendGrid, Inzaqa, ACTIONIQ, BLUECORE, CONTENT SQUARE, TEALUM, repartice, Amperio, amperity, QUANTIFIND, Simon, Lyfca, PERSADO, remesh

**CUSTOMER EXPERIENCE / SERVICE:** qualtrics, MEDALLIA, SurveyMonkey, CLARABRIDGE, zendesk, Kustomer, freshdesk, INTERCOM, Drift, EFFERSON, Gainsight, pendo, HEAR, Amplitude, Watson Assistant, Dialogflow, DigitalGenius, ASAPP, ada, AUTOMAT, ahnti, CaDesk, metomi, frame.ai

**ENTERPRISE PRODUCTIVITY:** slack, ORACLE, GURU lumia, DIFFBOT, clara, talla, Kasisto

### APPLICATIONS - INDUSTRY

**ADVERTISING:** AppNexus, critico, XAd, Integral, EVER AI, deepomatic, UBIQUITY, ADEE, YITU, trax, omni-us, SINEQUA

**EDUCATION:** Lullishou, 猿辅导, KNEWTON, Clever, Declara, kidapama, PANORAMA, knowre

**REAL ESTATE:** REFIN, Opendoor, VTS, CREDIFI, GEOPHY, reonomy, COMPSTAT, SPACEMAKER, STREETLIGHTDATA, Opus

**GOV'T:** OPENGOV, mark43, LiveStories, Passport, SmartProcure, STREETLIGHTDATA, Opus

**INTELLIGENCE:** Palantir, Dataminr, Quid, PRIMER, FORGE

**FINANCE - INVESTING KENSH:** Quantopian, ABDEAR, NUMERA, ISENTIUM, ALGOR, PlanorPack, PAGAYA, aire, cignifi

**FINANCE - LENDING:** ondeck, affirm, JIANPU, Kredtech, AVANT, TALA, finance, Upstart, auro, CLEARBANC, upgrade, 100Credit, WeLab, Wecash, TrueAccord, MoneyLion, Actix.AI, caire, cignifi

**INSURANCE:** trademile, Anomade, CYENCE, Hipo, Shift Technology, ROOT, CAPE

### HEALTHCARE

flitron, Clover, KYRUS, HealthTap, MITABOTA, Gingerio, Glow, babylon, 3DMed, zebra, pathai, ovia, TEMPUS, patientsikeme, AICure, insitro, citizen, prognos, entic, Backthon, BAYLABS, Qventus, ARTERY, IMAGE N, PAIGE, DATAVANN, INNOVACOR, LOUPE, LOUPE

### LIFE SCIENCES

color, verily, BenevolentAI, WUXI, NextCODE, ZENBIO, Clear Labs, Finnomia, PHAROS, DINAVIUS, CITRINE, twoAR, genomics, OWIN

### TRANSPORTATION

UBER, TESLA, CLEARPATH, CRUISE, NURO, drive.ai, CAMBRIDGE, Aurora, nauto, AMOTIVE, G7, PILOT.AI, NIO, PTIMUS, moovit, nexar, Kodiak, comma.ai, netradyne, KODIAC, Civil Maps, INRIX

### AGRICULTURE

FARMERS, granular, JOHN DEERE, BLUE RIVER, FarmerEdge, AgroStar, FarmLogs, TARANIS, GAMAYA, terrovision, prospero

### COMMERCE

instacart, F.A.R.E, STITCH FIX, RetailNext, FlowGood, heuritech, harmony, stem, Amper, ByteDance, VERDIGAS, duetto, SOJERN, BOXEVER, Electric, ZINER, Moveworks

### INDUSTRIAL

AVEVA, SIEMENS, PREDIX, UPTAKE, SCORTEX, KONUX, TACHYUS

### OPEN SOURCE

**FRAMEWORKS:** Spark, Flink, YARN, TEZ, MESOS, HADOOP, HIVE, HUE, ELASTICSEARCH, KIBANA, LOGSTASH, ELASTICSEARCH, KIBANA, LOGSTASH, ELASTICSEARCH, KIBANA, LOGSTASH

**QUERY / DATA FLOW:** Spark, SQL, presto, SLAMDATA, APACHE DRILL, GraphQL, Flink

**DATA ACCESS & DATABASES:** cassandra, mongoDB, redis, Cockroach LABS, druid, OGG, OPENYUGO, SciDB, riak, HBASE, Cloud Spanner, ICLOUD

**ORCHESTRATION & MGMT:** talend, Apache Airflow, MESOS, etcd, Kong

**STREAMING & MESSAGING:** Spark, nifi, Flink, beam, kafka, STORM, Apache RocketMQ

**STAT TOOLS & LANGUAGES:** Python, Scala, Studio, SePi, Julia

**AI OPS & INFRA:** miflow, Kubeflow, deep, DYC, SELDON, POLYSON

**AI / MACHINE LEARNING / DEEP LEARNING:** TensorFlow, Keras, PyTorch, OpenAI, DM TK, theano, Apache MxNet, Apache MxNet, DIMSUM, FeatureFu, VELES, Chainer, Microsoft ONNX, PyTorch, neon, DSSTNE, mlilab, DL4, MAHOUT, Aerosolve, FastML, mlr, OpenML

**SEARCH:** elasticsearch, Solr

**LOGGING & MONITORING:** elasticsearch, kibana, PROMETHEUS, logstash, fluentbit, fluentd, Grafana, VECTOR

**VISUALIZATION:** matplotlib, TensorBoard, seaborn, DASH

**COLLABORATION:** Jupyter, ANACONDA

**SECURITY:** Apache Ranger, KNOX, Sentry, ACCURUMLO

### DATA SOURCES & APIs

**HEALTH:** Apple, VALIDIC, practicefusion, fitbit, GARMIN, HUMAN API, kinsa, MIMIC

**IOT:** GE Digital, UPTAKE, thingworx, helium, samsara

**FINANCIAL & ECONOMIC DATA:** Bloomberg, THOMSON REUTERS, DOW JONES, SAP CAPITAL IQ, CB RENTIS, PLAID, SECOND MEASURE, EVERETT VOOLKEE, GEstimize, PREMISE, Quandl, Taggle Alpha, StockTwits, xignite, Thinknum, earnest, predata

**AIR / SPACE / SEA:** Orbital Insight, p1net, AEROBOTICS, spire, WINDWARD, DroneDeploy, MarineTraffic, LOFT ORBITAL, IS Places

**PEOPLE / ENTITIES:** ACTION, experian, EPSILON, InsideView, Crimson Hexagon, Quantcast, B.A.S.I.S, SAFE GRAPH

**LOCATION INTELLIGENCE:** FOURSQUARE, mapbox, sense360, priny boxes, HEXAGON, PlaceIQ, esri, factual, CARTA, Mapillary, Streetline, cuebic, Radar, OpenStreetMap, iGraff.io

**OTHER:** DATA.GOV, IMAGENET, CRUX, iGraff.io

### DATA SERVICES

OPERA, fractal, kaggle, DataKind, INNOPLXUS

### INCUBATORS & SCHOOLS

PLURALSIGHT, DataCamp, DataElite, INSIGHT, The Data Incubator, METIS

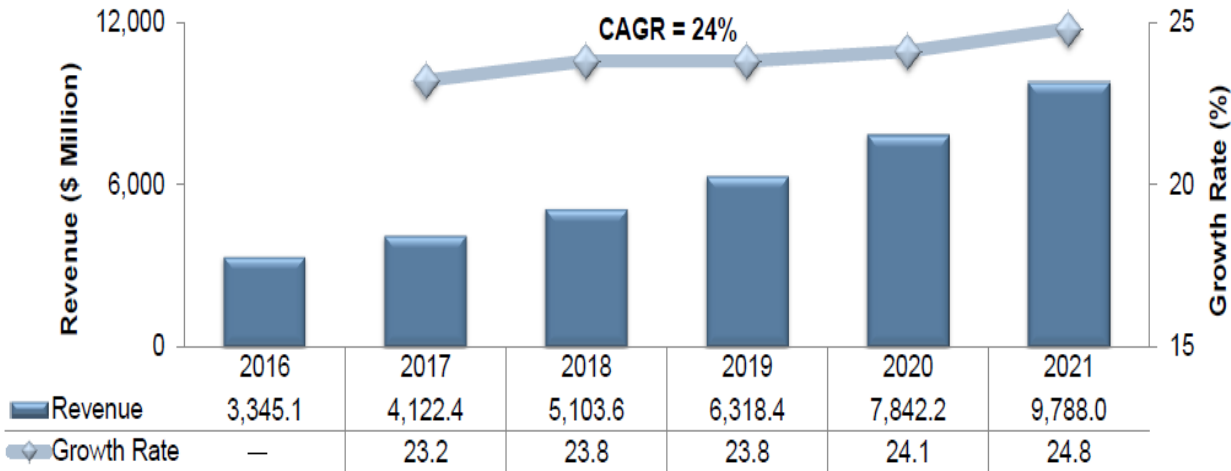
### RESEARCH

facebook research, OpenAI, MIRI, VECTOR INSTITUTE, ALLEN INSTITUTE FOR ARTIFICIAL INTELLIGENCE

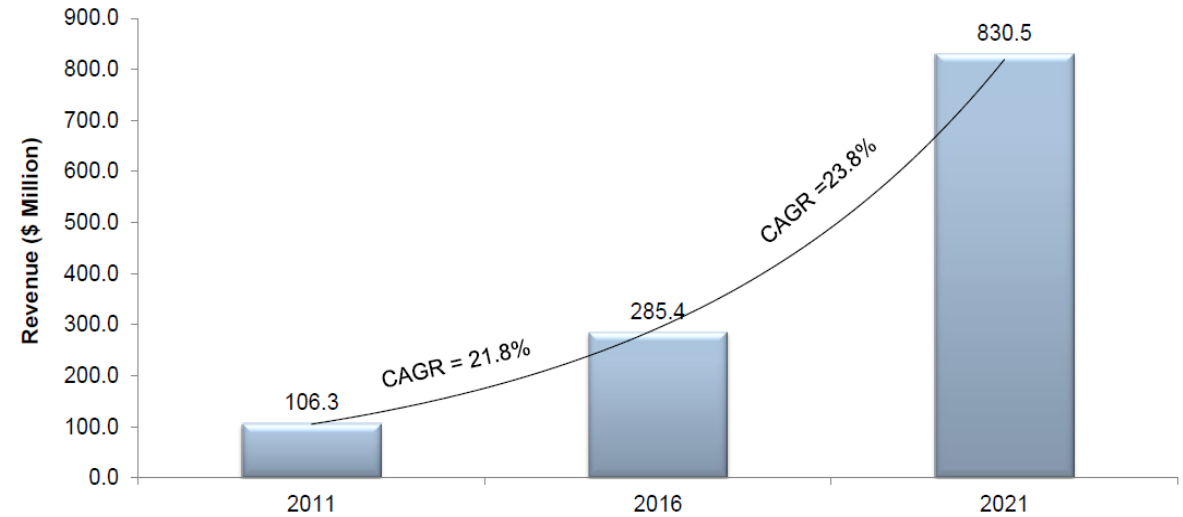
# Trend 1: Using cloud film as a carrier

The **healthcare cloud computing market** is expected to grow rapidly, with a compound annual growth rate of 24% from 2016 to 2021. As an image carrier, **cloud-based medical imaging informatics market** is also very promising, with approximately \$285.4 million, more than doubled from \$106.3 million in 2011. It is expected to continue to accelerate, reaching \$830.5 million at 2021 and a CAGR of more than 20% over a ten-year period.

Healthcare Cloud Computing Market: Revenue Forecast and Growth Rate, Global, 2016-2021



Cloud-Based Medical Imaging Informatics Market: Revenue Forecast, Global, 2011-2021



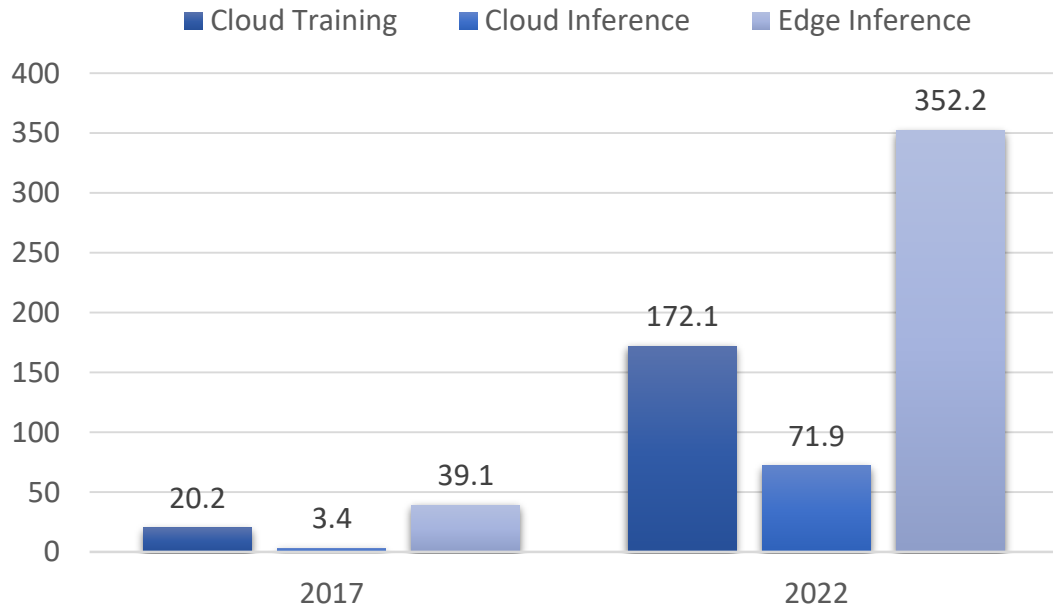
Note: CAGR period is 2016-2021

Note: All figures are rounded. The base year is 2016. Source: Frost & Sullivan

# Trend 2: Deploying algorithm on cloud

AI (for health) modeling consists of two phrase, one is training, the other is inference. It is expected to have more **training task deployed on cloud** rather than on the device because of AI chips performance. While, in order to comply with the flexible needs of the application scenario, **inference on edge** will have more applications.

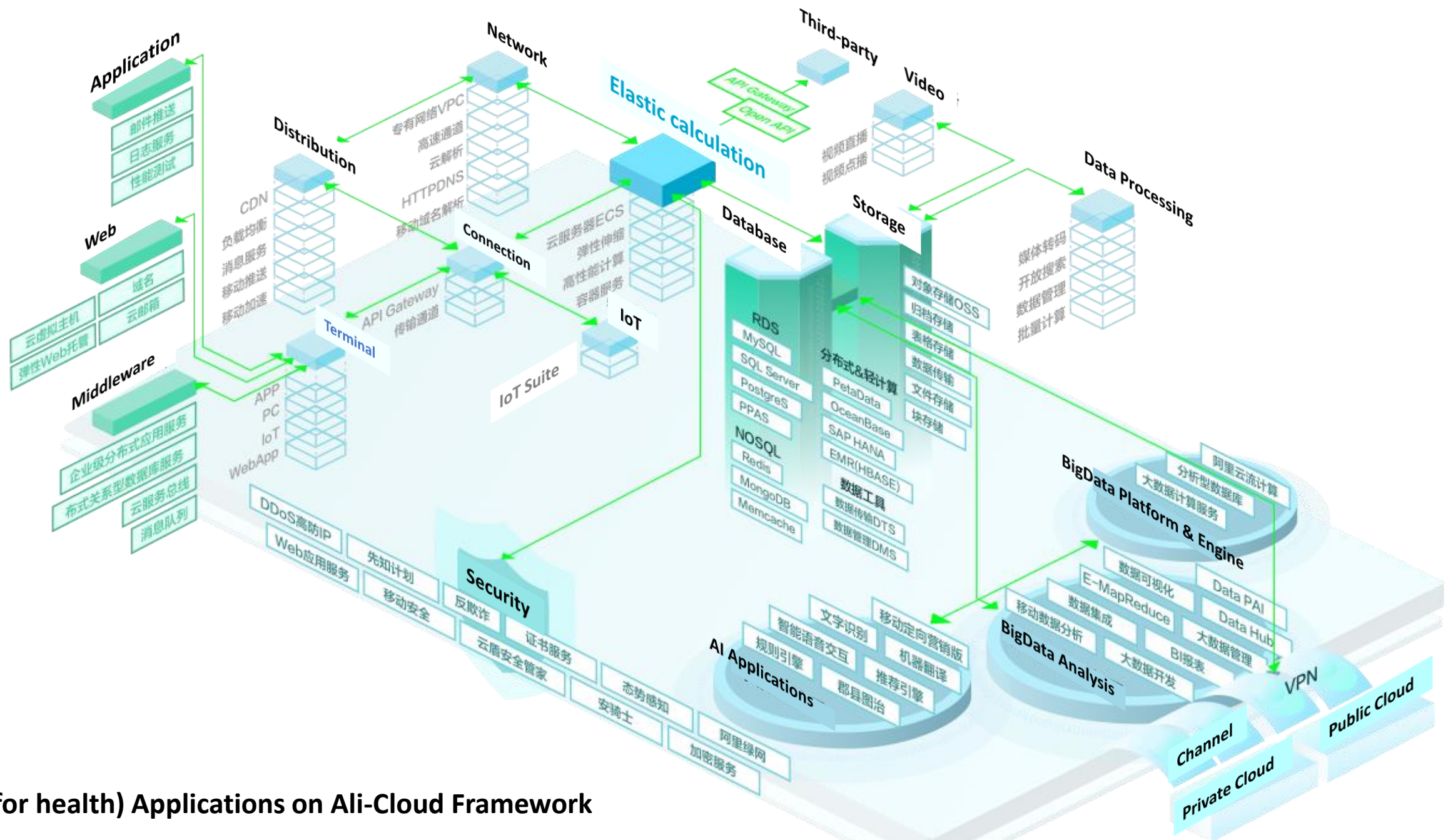
2017-2022 AI Chip Segment Market



Data Source :Gartner、 Ping An Securities Research Institute







AI (for health) Applications on Ali-Cloud Framework

# Public Cloud: End to End solution

Data source  
**TIANCHI**  
competitions



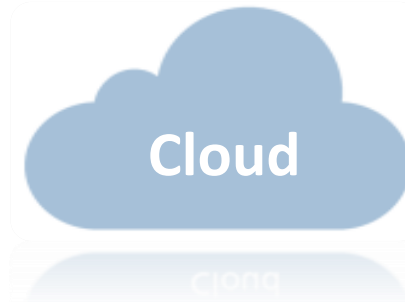
Authoritative diabetes related Chinese journals of 7 years, includes basic research, clinical research, drug usage, clinical cases, diagnosis and treatment methods, etc.

Various and  
compatible **data**  
components



“consolidate, share and manage imaging data generated across the healthcare continuum”

Deliver the solutions  
over the **Cloud**  
Platform



“liberate technology enabling providers to easily implement new business strategies”

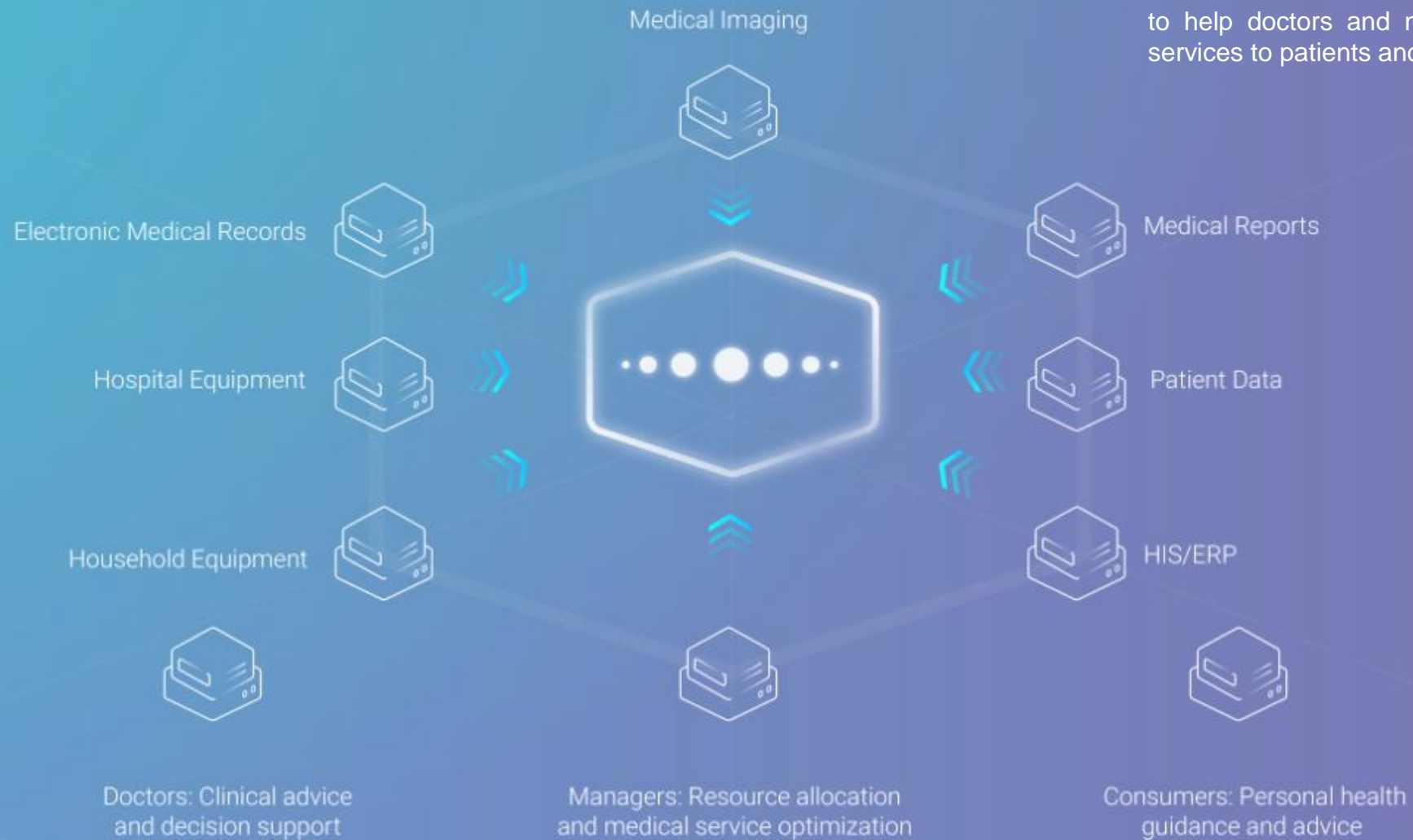
Leverage the cloud platform  
for **Artificial Intelligence** on  
demand



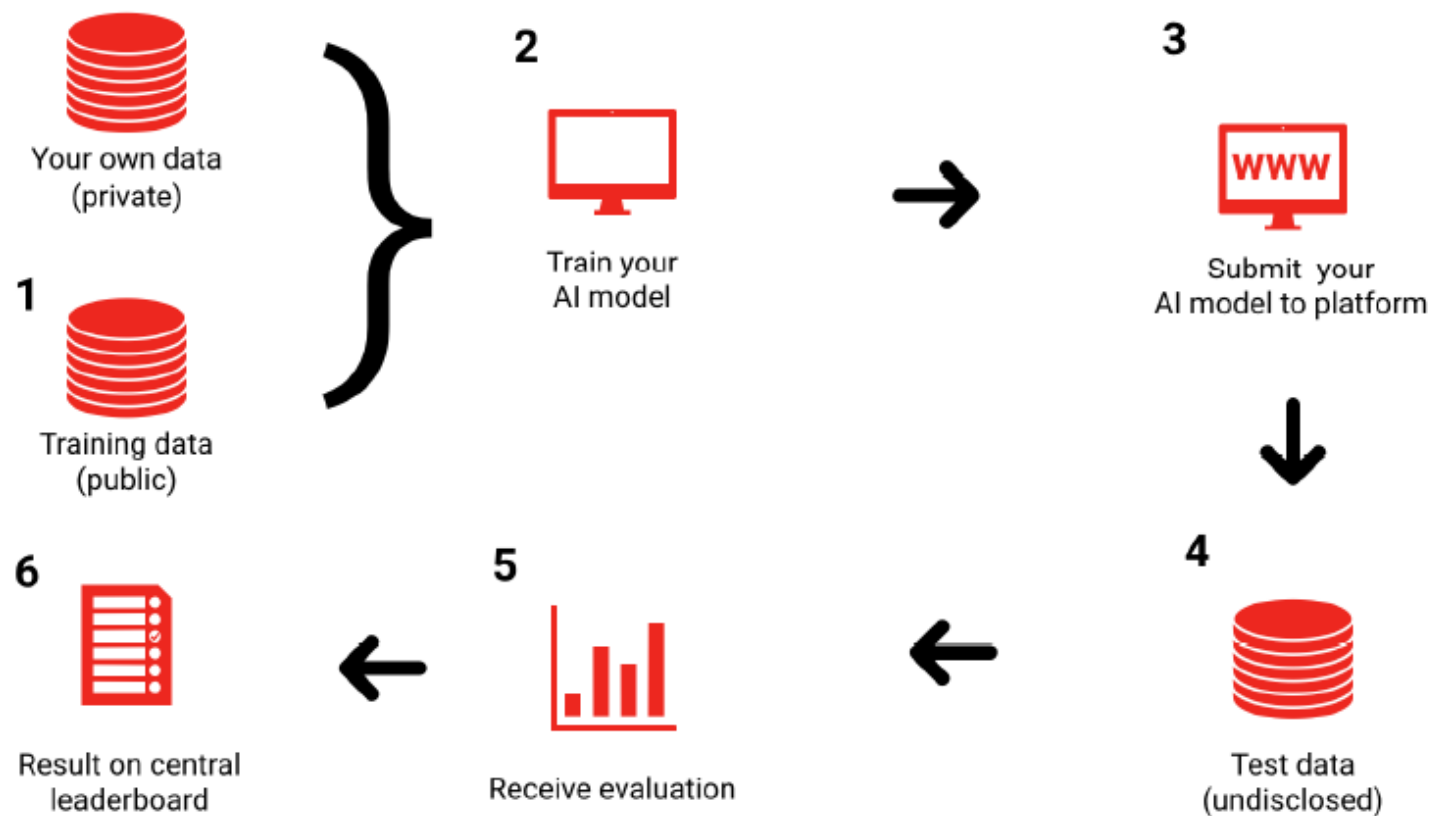
“Analytics for clinical decision support, research, quality, and population health”

# ET Medical Brain

Alibaba Cloud is committed to apply data intelligence to help doctors and nurses offer better healthcare services to patients and ultimately save more lives.



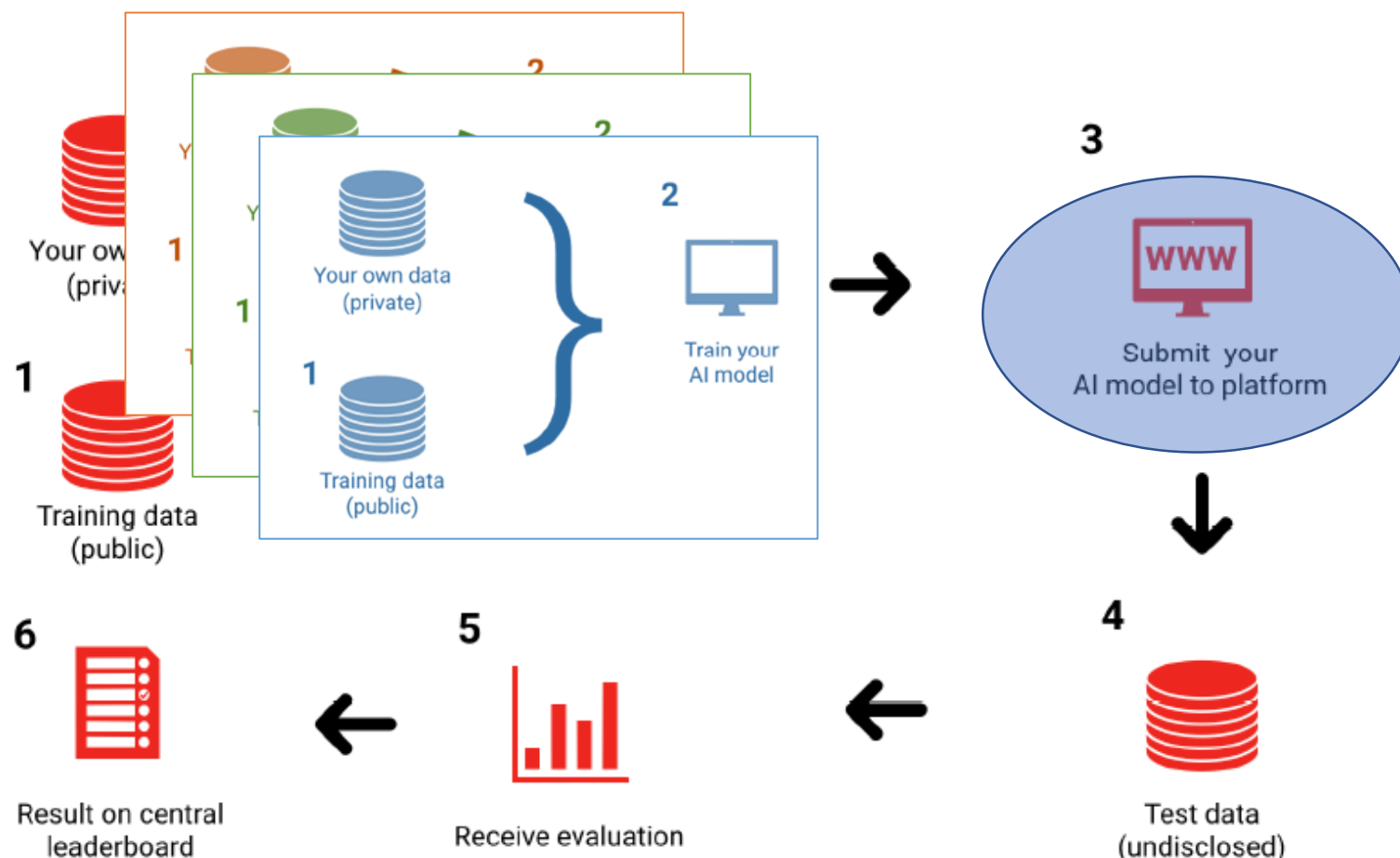
# Private Cloud: for AI4H benchmark



NOTE: Private data: One's own data for training purposes; Undisclosed data: test data not available to algorithm developers.

Figure 2: A benchmarking pipeline

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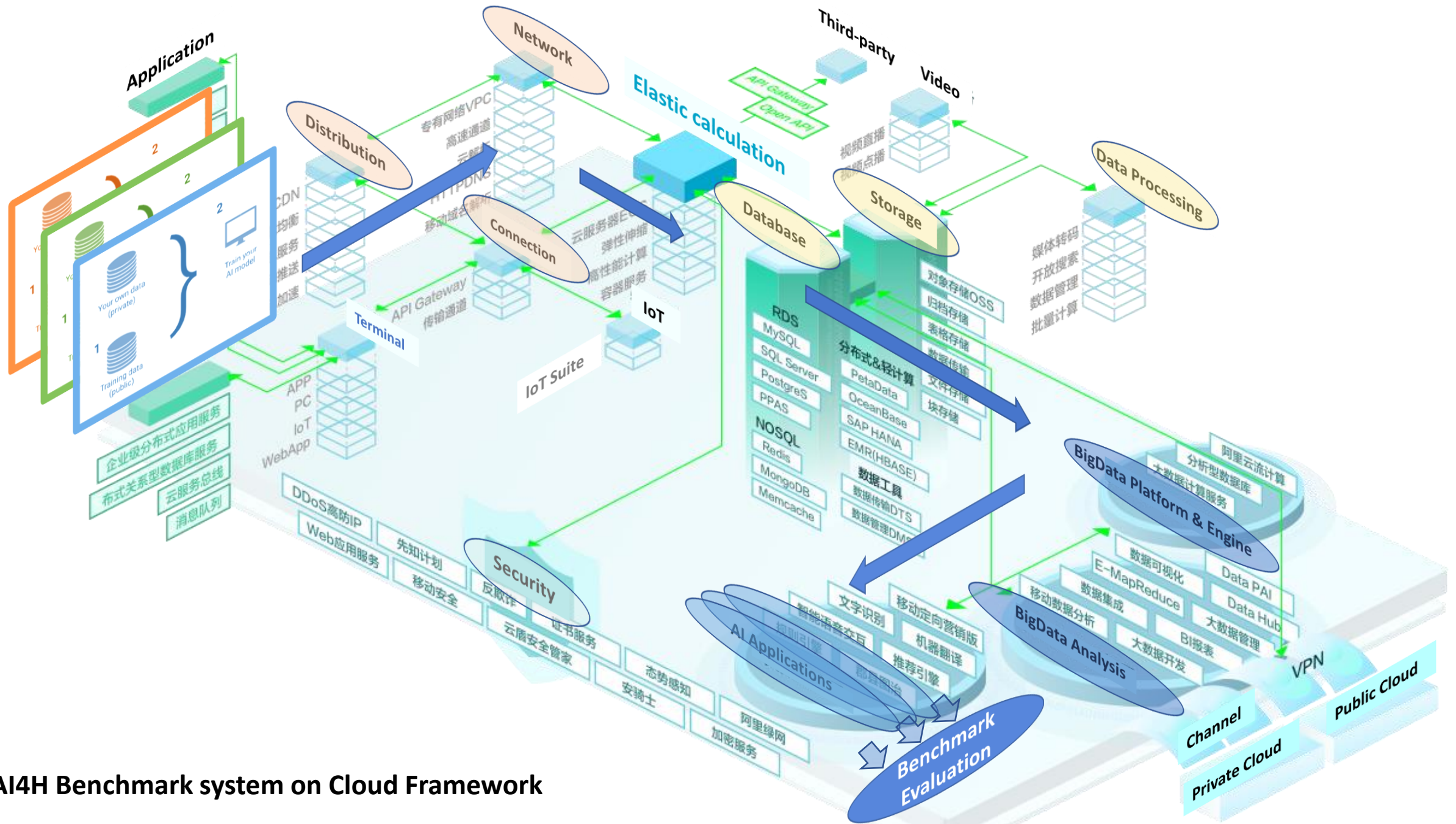
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Regardless of nontechnical factors:

- Ethics
- Condition of usage
- Submission motivation
- Data governance
- Scenarios(complicated)
- Etc.

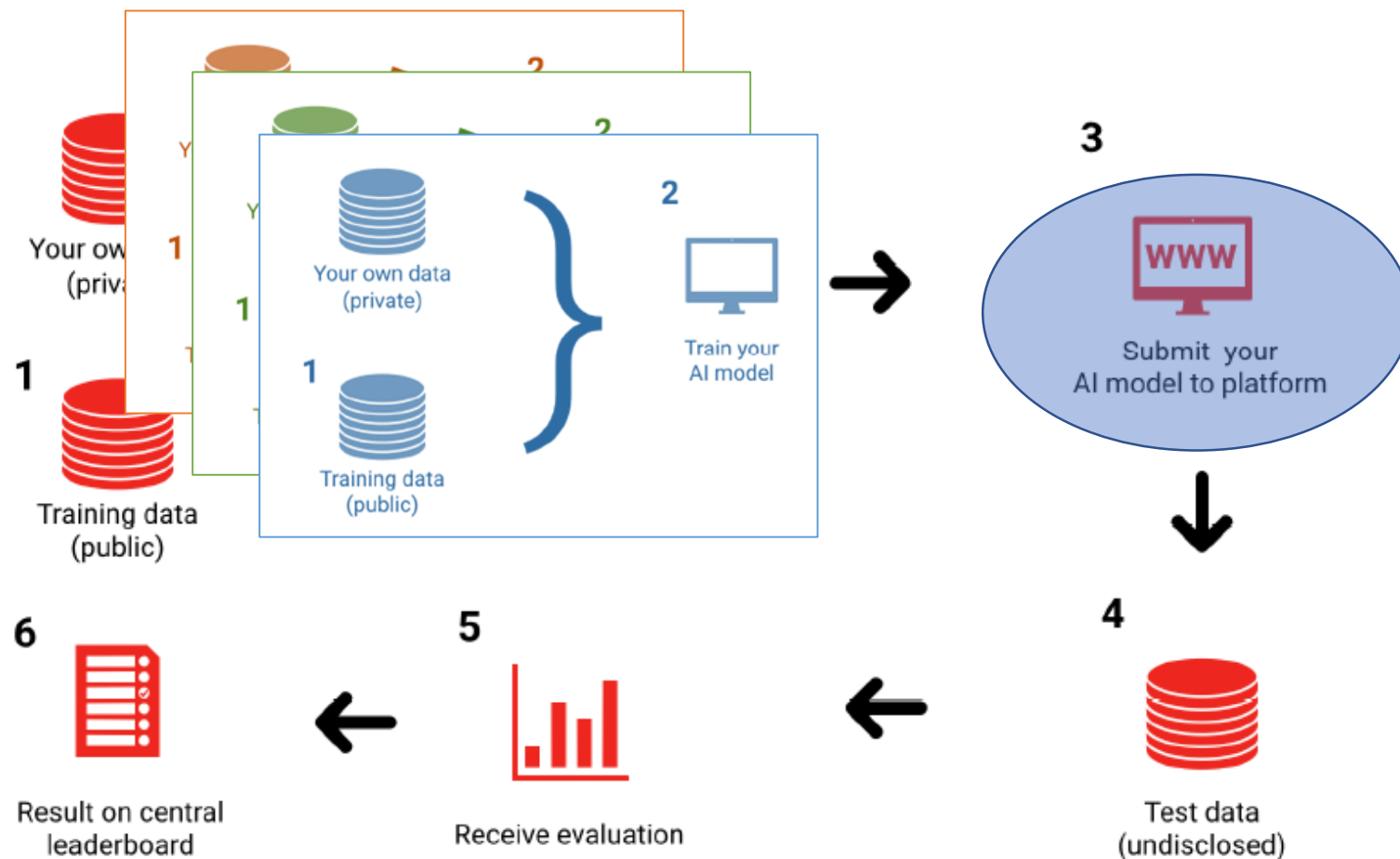
Many technical problems to be solved:

- Data format/API
- Storage resources
- Computing resources
- Professional requirements for operation & maintenance
- Deployment methods
- Testing environment
- Etc.



AI4H Benchmark system on Cloud Framework

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- Ethics
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Many technical problems to be solved:

- Data format/API ✓
- Storage resources ✓
- Computing resources ✓
- Professional requirements for operation & maintenance ✓
- Deployment flexibility ✓
- Testing environment ✓
- Etc.

Thank you !