

# Lenovo Al

Delivering cognitive solutions - core to edge, cloud to enterprise.

## Lenovo **Al Infrastructure**

**8**Platform
Categories

60+ Al-Ready Platforms

High performance storage & compute DC & edge portfolio that scales with your demand

### Lenovo Al Discover

Center of Excellence

4 Global COEs 180+
Countries
served

Find faster time to value by leveraging the Lenovo Al Center of Excellence.

## Al Innovators

Partner Ecosystem

50+

150+

Al Solution Partners

Enterprise Al Solutions

Leverage certified solution partners to confidently address customer requirements.

### Delivering infrastructure to full stack solutions

Accelerating time to value while reducing complexity with our validated solution designs.

### **Desktop To Data Center: End To End Al Infrastructure**

### **Al Development**



**Lenovo Data Science workstations** & mobile workstations

#### Powerful model development

- Bringing Deep Learning to your Desktop
- Your own Sandbox environment for prototyping & model development
- The only Threadripper Pro Data Science Workstation available globally

### **AI Training**



**Lenovo ThinkSystem SR670 Lenovo Al Training RAs** Lenovo Scalable Infrastructure

#### Scale out distributed Training

- Optimize training infrastructure use with LiCO
- Expand as your models scale, and your users grow
- Supported, integrated solutions for maximized performance
- Unique, Modular design provides maximum density for PCIe accelerators
  - SR670: 8x SW GPU in 2U
  - SR670v2: 8x DW or 14x SW in 3U

### Al Inference



Al-Ready ThinkSystem Servers, **Client Al & Smart Edge Products** 

#### Inference from Core to Edge

- Ruggedized IoT servers, taking inferencing to the edge
- Dense GPU & CPU platforms for inferencing in your data center
- Extreme performance at the edge with the most compact edge server supporting discrete GPUs
- Devices ranging from .5 Liters up to rack servers for inferencing workloads from the far edge to the DC



### Al Landscape 2023

### Top Al Startups

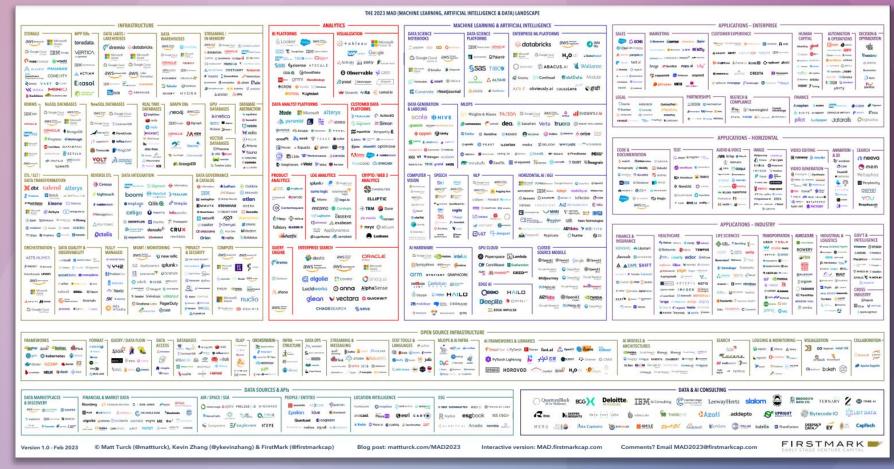
- A who's who you never heard of
- Rapidly changing market

### Buy Al Capability

- 100s of companies to choose from
- >50% of POCs fail getting into production

### Build Al Capability

- Rapidly changing technology
- Deep skills needed
- Challenges both Ways



## **Lenovo Al Building Blocks**

Smarter AI embedded in everything we do



High performance storage & compute DC & edge portfolio that scales with your demand.



Find faster time to value by leveraging the Lenovo Al Innovation Centers.



Leverage certified solution partners to confidently address customer requirements.



Pre-validated solutions reduce the complexity with architecting, ordering and getting support for Al solutions – buy a solution, not a bag of parts.

### Your Al Partner for Scale





Solution **Providers** 



+many more



Qualcom Strategic Alliances & Vendors







Delivery Partners

30k+ Channel partners

50+

**AI Solution Providers** 



150+

**Enterprise Al** Solutions

180+

Countries served





Reduced complexity, early technology access, quicker deployments and time to value



Complementing cutting edge tech with world class supply and supports chains



Combined Al expertise across technology stacks, industries and research



Full range of support from PoC to Scaling Al, locally or worldwide at lower risk and full cost of ownership

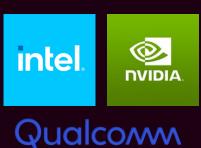


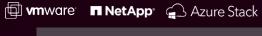
## Lenovo Al Innovators

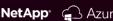
### Partner Ecosystem

A cross-stack, AI ecosystem providing access to a variety of validated, vertically aligned solutions, built atop Lenovo's bestin-class Al portifolio.

#### **Global strategic partners**

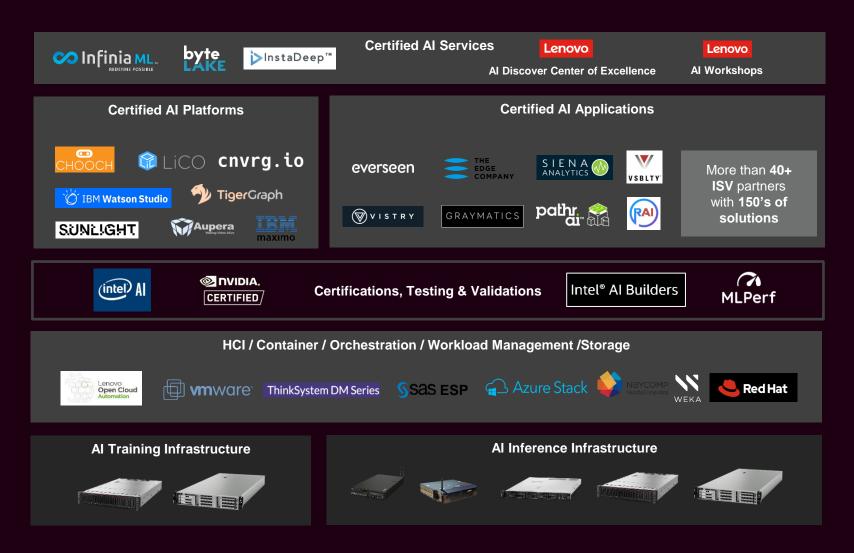








Channel **Fulfilment** Partners



### **Lenovo Al Innovators**

### For Partners



Combined AI expertise across technology stacks, industries and research



Reduced complexity, early technology access, quicker deployments and time to value



Full range of support from PoC to Scaling AI, locally or worldwide at lower risk and full cost of ownership



Complementing cutting edge tech with world class supply and supports chains

#### **Scale Partners (Level 3)**

Large Scale ISVs with multiple deployments, looking to improve their efficiency and break into new markets

Focus: Supply Chains, Last Mile, International, OEM and Reselling

#### **Deploy Partners (Level 2)**

Mid-sized ISVs, looking to simplify their deployments and improve their GTM efforts with Lenovo

Focus: Go To Market, Marketing and Optimization

#### **Explore Partners (Level 1)**

Niche ISVs with great technology, still finding productmarket fit

Focus: PoCs, Testing and deployment support

### **Lenovo Al Innovators Tiers & Benefits**

Benefits	Explore	Deploy	Scale
Al Center of Excellence Lab Benchmarking and Optimization		Priority	Full Suite Support
Marketing	Solution Specific	Assets and Events	Full Co-marketing
PoC Support	<b>✓</b>	<b>✓</b>	<b>✓</b>
Sales / Accounts Mgmt.	×	Passive Opportunity Mapping	Active Opportunity Mapping
Deployment Expertise	×	Local Expertise and Mentorship	Global Network and Best Pratices
Internationalization	X	Standard	Global Support
Supply Chain / OEM	X	×	Global Support







everseen

Evercheck Visual Al Platform Everdoor Visual Al Platform **Evershelf Visual AI Platform** 

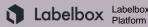


Guise Al Airport Ground Operations Guise Al Digital Signage Guise Ai Oil & Gas Guise Ai Traffic Management

maximo

IBM Maximo Predictive Maintenance IBM Maximo Remote Monitoring IBM Maximo Visual Inspection

IBM Maximo Asset Management





alwaysAl Smart Retail

alwaysAI Smart Venues

alwaysAI Smart Construction

alwaysAl Smart Manufacturing



DeepChain DeepPack DeepPCB

Industrial Metaverse

Retail Metaverse

**/// Fingermar** 

Supersonic Eyecue Digital Menu Boards

Guise AlInteligent Audio Guise Al Manageability Platfrom





Azure OpenAl Azure Cognitive Service for Vision Microsoft Azure Azure Machine Learning Azure Custom Vision Azure Metrics Advisor



Ai Services

Automated Intelligent Drive-Thru Assistant (AIDA) Analytics Dashboard Conversational Al Core Engine



Lenovo

Pathr.ai Spatial Intelligence Solution



Asset.Al Factory.AI Lift.AI SupplyChain.Al Anything.AI





Dataloop LiDAR

Peak Asset Insights

Peak Mobile Insights

Peak Analytics

Peak M-Netics

NR1 NAPU NR1 M NR1S



Patient Room of the future Operating room of the future Clinic of the future Command Center of the future Assistied Living Facility of the future



kinetic vision

**EAIGLE Automated Vehicle Access Control** (AVAC) **EAIGLE Access Control Solution for Visitors EAIGLE Density Analytics EAIGLE Thermography Monitoring Solution** 



Al Innovators

FedML Al App Ecosystem FedML Open source FedML Octopus FedML Parrot FedML Beehive FedML Spider FedML Cheetah



SAS Anti Money Laundering SAS Fraud Detection SAS Customer Intelligence 360 SAS Econometrics SAS Visual Forecasting



**Dataloop Automation Platform** 

**Dataloop Data Management Platform** 

LabVista UrbanVision siteInsights Vista Mart Vista Karma G-Safe



Bikal Al Platform Bikal Al Security **Bikal AI Services** 

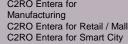






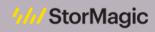




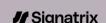




**Data Activation Platform** Edge to Cloud **Data Migrator** 



StorMagic SvSAN



cnvrg.io platform

Signatrix Instore Analytics Signatrix Loss Prevention



Peak Label Management Systems

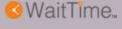
Viztel **ShopAssist** Edge Central



Corsight Fortify **6** corsight

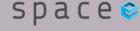


Aupera VMSS for Retail Aupera VMSS for Smart Cities Aupera VMSS for Manufacturing





**StoreOS** EasyOut EasyStock



Deming ROVR Deming RANGR Deming OVSERVR HoverTouch Platform





Lenovo

Chooch Al Vision Platform

Chooch Image Chat

Corsight RESTful API





OpenShift Data Science



**DataCaptor** VisionCaptor **VSBLTY Vector** Retail Hardware Solutions



Video Surveillance as a Service Al Platform



SUNLIGHT

Sunlight NexCenter Sunlight NexVisor

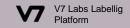
Sunlight HyperConverged Edge

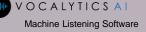


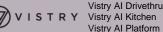


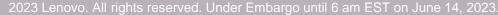


Robotics Process Automation Computer Vision Supervisory Control and Data Acquisition System (SCADA) Power Substation Automation (PSA)









## Top verticals for ISV partners and their Al solutions











• Supply chain & logistics

Al Training platforms

Retail	Manufacturing	Smart Cities	Finance	Healthcare
<ul> <li>Loss Prevention</li> <li>Logistics / Shelf         restocking</li> <li>Omni-channel analytics         &amp; engagement / sales         automation</li> <li>Check-out automation</li> <li>Shopping         recommendation &amp;         merchandising</li> <li>Transaction payment         systems</li> <li>IT automation</li> </ul>	<ul> <li>Predictive Maintenance / Digital Twin</li> <li>Quality Control / Visual Inspection</li> <li>Demand forecasting</li> <li>Inventory management, supply chain &amp; logistics</li> <li>Production line, robotics &amp; process optimization</li> <li>IT automation</li> </ul>	<ul> <li>Crowd Management and Analytics</li> <li>Distributed Edge and large scale Orchestration</li> <li>Security and Access Management</li> <li>Traffic control and smart policing.</li> <li>Public Health and Safety</li> </ul>	<ul> <li>Credit decisions</li> <li>Fraud detection &amp;     Threat Intelligence</li> <li>Risk management</li> <li>Algorithmic trading</li> <li>Process automation</li> <li>Personalized banking /     customer service &amp;     sales automation</li> <li>Regulatory intelligence</li> <li>IT automation</li> </ul>	<ul> <li>Medical Imaging / diagnosis treatment</li> <li>Clinical decisions support (CDS)</li> <li>Customer service agents</li> <li>Process &amp; back office automation</li> <li>Inventory management, supply chain &amp; logistics</li> <li>IT automation</li> </ul>
Security & Heath Checks     NLP for Data extraction				

MLOps & Analytics

IVA Platforms

**Horizontal** 

## Delivering tomorrow's oil & gas experience today with Al

#### Lenovo **Al Innovators**

It provides certified Al solutions, and helps customers build up their own through our Al Discover Labs



Or build your own Al solutions with:



















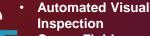


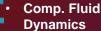






Lenovo 2023 Lenovo. All rights reserved.





**Bespoke AI Solutions** 



Lenovo **TruScale** 

### **Tomorrow's Venues for Fans with Al**

Crowd Analytics

Queue wait time

 Mobile app venue guidance for visitors

Lenovo Al Discover Center of Excellence

Lenovo Al Innovators

**Provides certified** Al solutions, and helps customers build their own through our Al Discover Labs

> Lenovo **TruScale**

Al Concierge for Wolfpack fans

Provides detailed facility information for fans

 Conversational Al Kiosk to naturally interact with fans at entry points in the stadium

**Custom Al Models Exploring New Ideas** 

 Automated checkout and payment

 Secure payment integration

## Delivering tomorrow's retail experience today with Al

The retail store of the future.



Personalized & dynamic advertising Digital dynamic displays, dynamic pricing (ESL)





**Customer & Store analytics** 















**People Counting** 

- Mask & Density Monitoring
- **Proximity and Infection index**



everseen

Visual Al platform for retail Checkout intelligence Loss prevention



Lenovo Al Discover Center of Excellence

Lenovo Al Discover Launch Workshops

Lenovo **Al Research**  Lenovo **TruScale** 

**Lenovo** 2023 Lenovo. All rights reserved.

## **Enabling Retail Automation with Al Solutions**

of the top food chains are Top 20 running Al on Lenovo

Stores powered by Lenovo Al

#### **Smarter Stores**

Automated pricing and self-checkout Access monitoring Queue monitoring Shelf monitoring Theft prevention Customer behavior

#### **Smarter Drive-thru**

Meal and package recognition Order monitoring Drive-thru automation Employee to Vehicle interaction Vehicle monitoring

















### **Enabling Logistics Providers to Deploy Al Solutions**

50M+

Packages managed by Lenovo Al Infrastructure for logistics

100M+

**Products** manufactured with Lenovo Al

180+

Countries served by Lenovo Al capabilities



Automated labelling Conveyor belt monitoring Bottleneck monitoring **Demand prediction** 

#### **Smarter Back of Store**

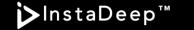
Pallet delivery monitoring Fraud prevention Access monitoring Human to machine interactions

















## Delivering tomorrow's banking experience today with Al

**Data Security** 

- Video & Audio Recognition
- Fraud Prevention & Security

The Bank of



- **CX Focused Transaction Zones**
- **Smart Devices for Customer Service**



- Virtual Assistants
- Remote Conferencing
- Edge Computing





- Smart ATMs
- **Assisted Online** Banking
- **Automation**
- **Digital Twins**



Lenovo Al Discover Center of Excellence

Lenovo Al Discover Launch Workshops

Lenovo Al Research Lenovo **TruScale** 

### As Al becomes more democratized with powerful tools in our hands, how do we ensure Al is used in an ethical way?

### Lenovo signs the "Women & Al" Pledge

for gender fair AI, joining 14 other companies including Qualcomm, Intel & IBM.

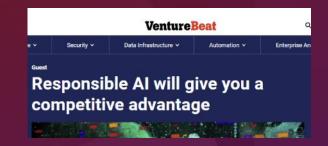
### **Lenovo Launches the Responsible AI Committee**

Made up of 20 individuals from across the company with our Responsible Al pillars published externally on VentureBeat.

### Responsible AI is part of **Product Diversity Office**

Every product or solution moving forward that contains AI will be flagged by the Lenovo PDO office for review.











2023

Lenovo pillars for Responsible Al

**Diversity &** Inclusion

Privacy & Security

**Accountability** & Reliability

**Explainability** 

**Transparency** 

**Environmental & Social Impact** 

## What to consider about Generative Al? Generative AI will be one of the greatest paradigms in Artificial Intelligence.

### **Prepare**

our customers for Al driven transformation

### **Transform**

our business by gaining new efficiencies with Generative AI capabilities

### **Deliver**

Generative Al solutions that are easily leveraged by our customers.

Near

#### Today!

### **LAUNCH: AI Workshop**

- Invite your customers to a Workshop to learn how they can prepare for Generative Al
- Access our data science experts to provide tailored recommendations for your customers
- Establish your Al-Ready data management & compute strategy to support new AI workloads such as generative Al

### Just imagine...

- Build self-healing servers that can write and apply patches.
- Automate security test scripts and penetration testing
- Automate server deployment by writing configuration scripts
- Build AI models from text prompts and automatically write code for Al application deployment

### **Deploy Generative Al**

- Onboarding Generative AI companies into Lenovo Al Innovators
- Deliver compute for generative AI to HPC, CSP / nextwave, edge and the enterprise.
  - New Accelerator offerings
  - New server form-factors
- Reference designs and DRS for generative AI with compute, storage and software.

**Lenovo** 2023 Lenovo. All rights reserved.



Industry Memberships













Intel® AI Builders