

# Empowering AI Transformation with AiHPC

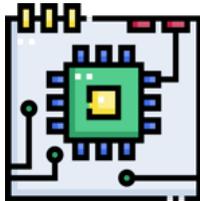
Welcome to the AiHPC Innovation, a transformative solution designed to revolutionize the way enterprises tackle the challenges of large-scale data processing, analysis, and workflow management. Our cutting-edge platform and services can help you unlock new possibilities in your business endeavors.



# Executive Summary

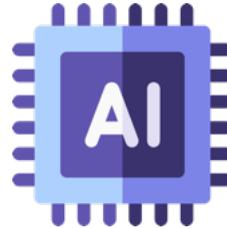
Comprehensive GPU Platform for Secure, Governed Enterprise LLM Deployments

## Infrastructure Management



- Centralized GPU control with container-level allocation
- On demand HPC application deployment

## AI Capabilities



- Supporting models from LLM, NLP to OCR
- Fine-tuning and optimization pipelines

## Enterprise Framework



- Authentication integration
- Role-based access controls
- Resources monitoring

✓ Maximize GPU Utilization ✓ Deploy Multiple LLM Instances  
✓ Ensure Data Governance ✓ Scale with Demand

# Navigating the AI Revolution in Enterprise Environment



Potential we have now and the challenges for the industries

## The trend of AI cannot be reversed - Enterprises Embracing AI for Transformation

**\$154.9B**

To 2030

The enterprise AI market is growing rapidly.

**25.7%**

CAGR

**67%**  
professionals regularly use AI tools

Consumers using AI have built a strong foundation for enterprise AI adoption

**96%**  
Reduction in doc processing time<sup>2</sup>

AI-driven automation delivers dramatic substantial cost reductions and efficiency gains.

**70.0%**  
Healthcare providers plan to invest in AI technologies<sup>3</sup>

AI enhances productivity, decision-making, and competitive advantage.

## Enterprise AI Adoption Barriers: Critical Requirements Gap

### An On-Premises solution is needed:

Critical data and information must be stored in-house, driven by regulatory requirements and data sovereignty needs..

### Data Security & Privacy Concerns:

Proper AuthN and AuthZ are critical in enterprise environments, requiring seamless integration with existing security systems.

### Scalability and resource allocation:

Enterprises need efficient scalability and resource allocation for multiple AI models within limited infrastructure.

### Accountability and monitoring:

Enterprise-level audit mechanisms and performance monitoring are essential in AI governance.

### Limited Solutions and talents:

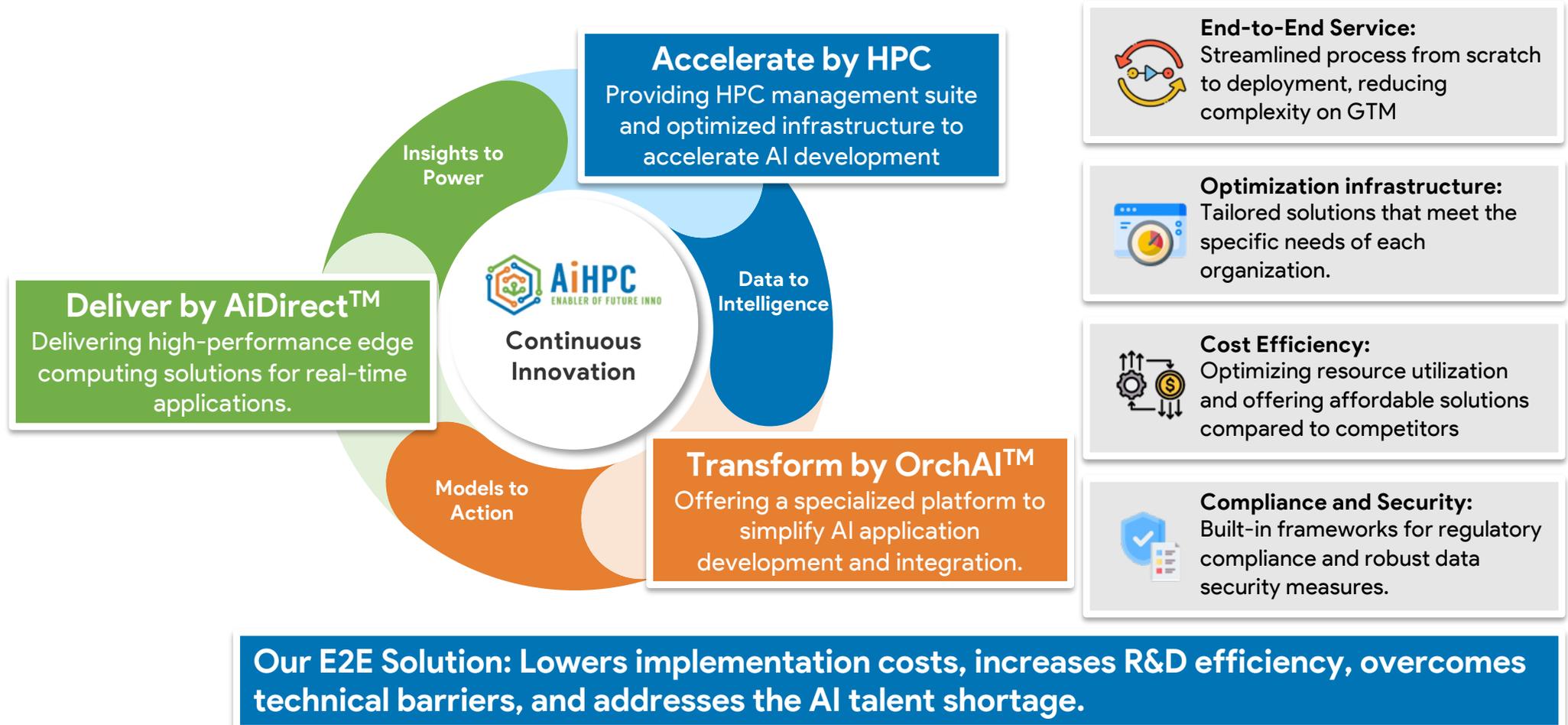
Shortage of mature, turnkey AI solutions for private infrastructure, compounded by the scarcity of specialized AI talent.

**How can organizations effectively overcome the technological, regulatory, and resource barriers to adopt and scale AI securely and efficiently within their own on-premises or hybrid environments?**

# AiHPC Delivers E2E Solutions to Accelerate AI Adoption



Our Integrated Approach Overcomes Barriers and Drives Outcomes



# End-to-end AI Infrastructure Solution: Simplifying Complex HPC for Enterprise AI



Supercharge Data Processing Capabilities with Our HPC Solutions

## AiHPC Portal

Managing AI workloads is complex →  
Simplified management

Enterprise-Grade Security

Interactive Job Control

Dynamic Resource Allocation

Smart Usage Analytics

## AiHPC Meter

Performance optimization is challenging  
→ Automated optimization

Framework-specific metrics

Multi-aspect monitoring

Real-time performance insights

Optimization recommendations

## AiHPC Service

Support needs are diverse →  
Complete support

Infrastructure provisioning

Framework deployment

Technical consultation

Ongoing maintenance & support

### Powered by:



### Selected stories:

- Deployment of AiHPC Portal at **100+ nodes** HPC environment for interactive jobs and billing system.
- Designed and implemented HPC architecture for **Genomic Research**
- Provided AiHPC Portal for enhanced resource and workflow management.
- Designed and developed **AI software-orientated GPU card performance evaluation** under the liquid cooling environment with AiHPC Meter suite.



**We empower AI availability with highly flexible, cost-efficient, user-friendly enterprise HPC solutions.**

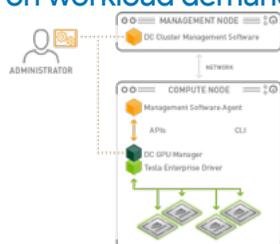
# Technology: Enterprise-Grade Infrastructure Management



What We Believe is Maximizing Hardware Investment with Granular Control

## On-Demand Resource Allocation

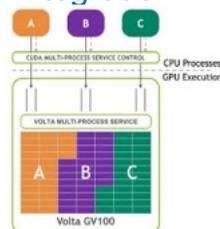
Dynamic allocation of GPU resources based on workload demands



Efficient containerization enables a 300% improvement in GPU utilization rates<sup>1</sup>

## Fine-grained GPU Partitioning

Centralized administration with API integration



Dynamic GPU sharing shows 4.5x improvement in specific research environments.<sup>2</sup>

## Enterprise Integration

Role-based access control and seamless integration with existing identity management systems



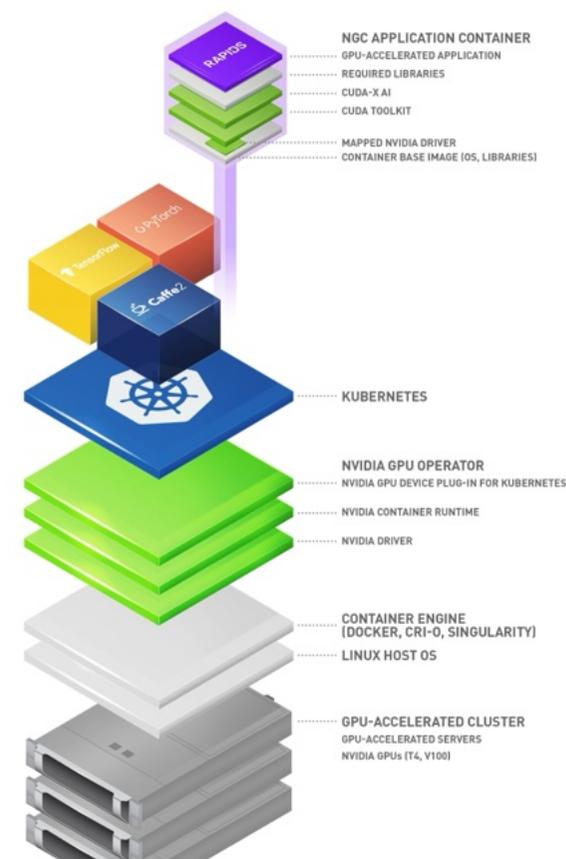
- Supports LDAP, OAuth, and other enterprise authentication standards
- Automated user provisioning and de-provisioning workflows

## Monitoring and Tracking

Comprehensive usage analytics and reporting  
Cost allocation and chargeback capabilities



- Real-time resource utilization visualizations and historical performance trending, and predictive analytics



**A well-architected HPC infrastructure is the foundation determining the success of the entire AI journey.**

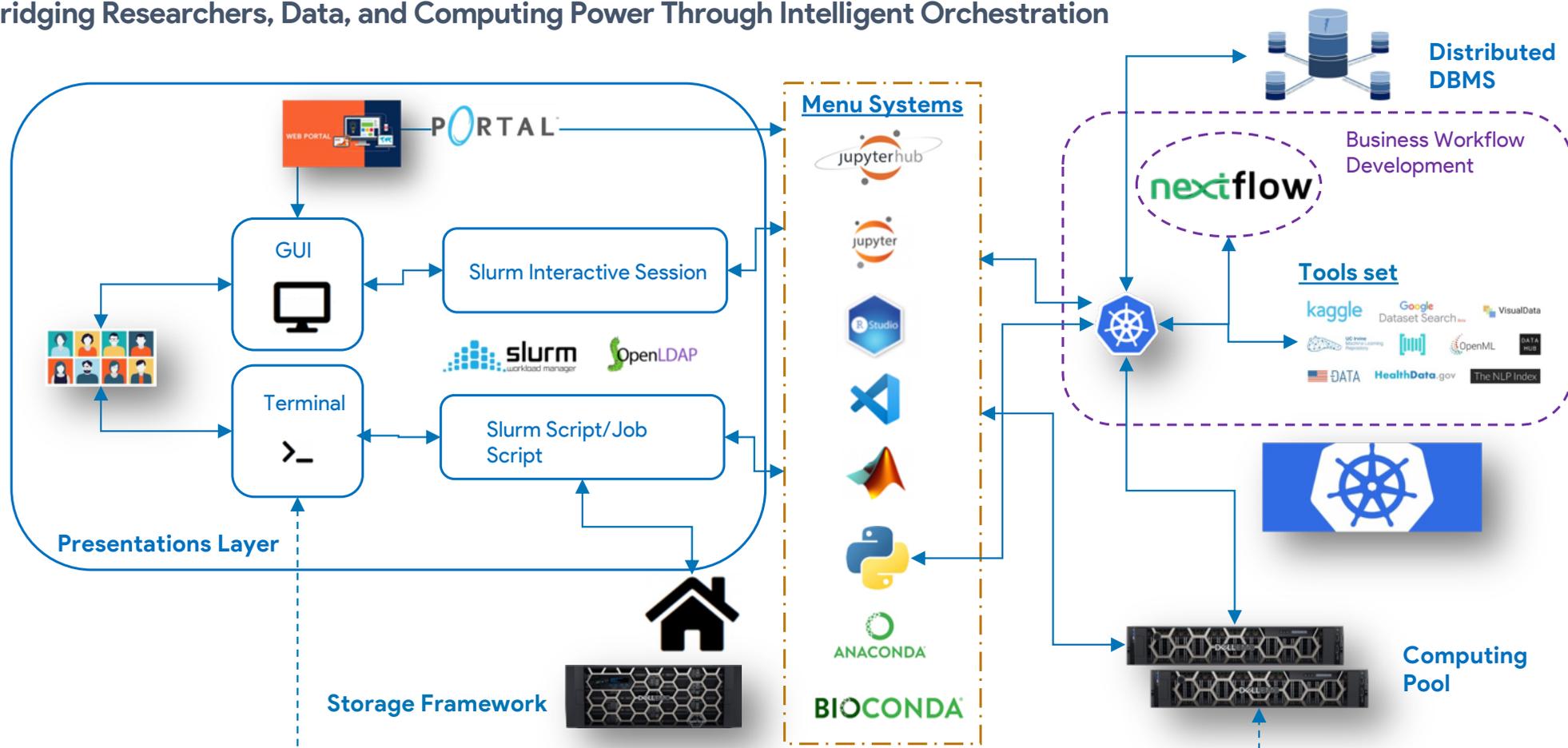
<sup>1</sup> NVIDIA. (2023). Maximizing GPU utilization for AI workloads with MIG technology.

<sup>2</sup> Zhang, Y., et al. (2021). Dynamic GPU sharing for deep learning in Kubernetes.

# AiHPC Portal to Manage AI Data Flow and Computing for Research Institute



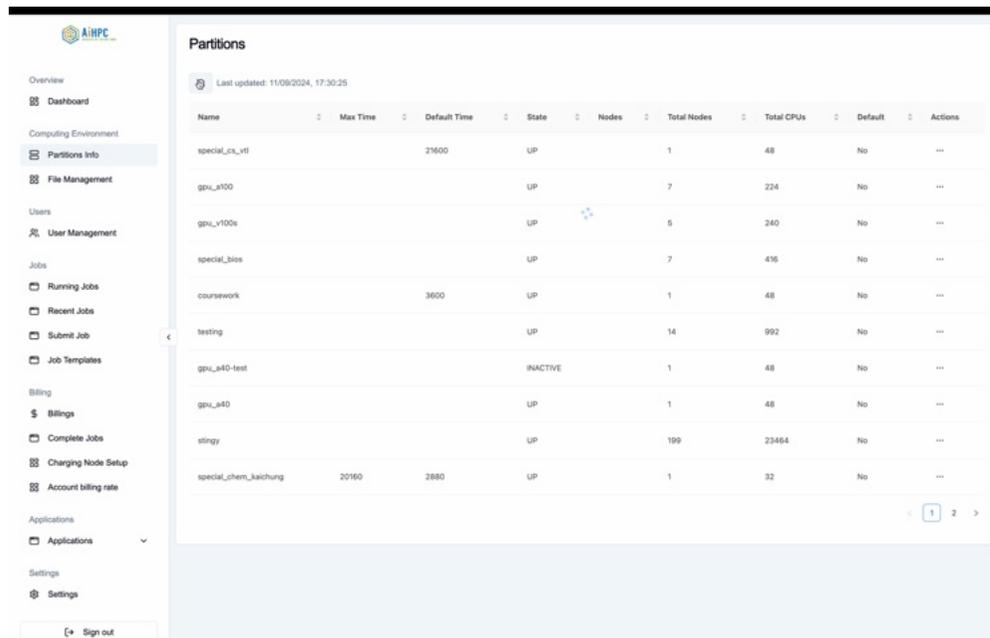
Bridging Researchers, Data, and Computing Power Through Intelligent Orchestration



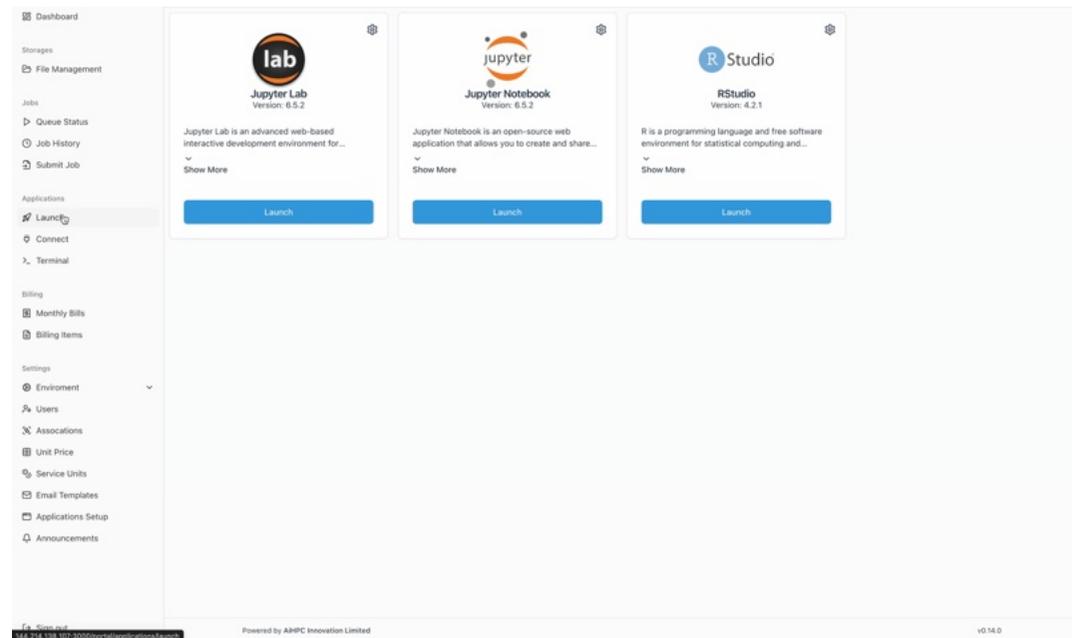
By unifying access, computation, and storage, the AiHPC Portal creates the one-stop solution optimizing institutional infrastructure investments.

# AiHPC Portal in Action: Streamlining Job Management and Workflow Management

Demonstration of the HPC management with a GUI platform



Name	Max Time	Default Time	State	Nodes	Total Nodes	Total CPUs	Default	Actions
special_cs_vf		21600	UP		1	48	No	...
gpu_a100			UP		7	224	No	...
gpu_v100s			UP		5	240	No	...
special_bios			UP		7	416	No	...
coursework	3600		UP		1	48	No	...
testing			UP		14	992	No	...
gpu_a40-test			INACTIVE		1	48	No	...
gpu_a40			UP		1	48	No	...
stiny			UP		199	23464	No	...
special_chem_kaichung	20160	2880	UP		1	32	No	...

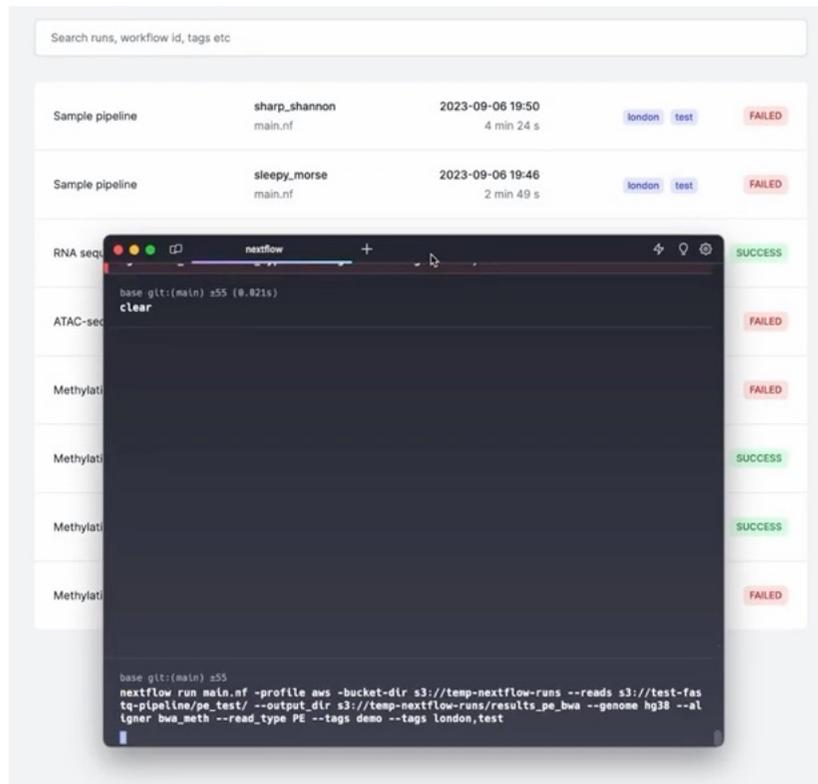


*Demonstrates comprehensive HPC job monitoring with real-time tracking of computing resources, partition utilization, and historical job retrieval capabilities.*

*Showcases script-free launching of scientific applications, including Jupyter Lab, Notebook, and RStudio, enabling researchers to instantly access computing resources without technical barriers.*

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Demonstration of the HPC management with a GUI platform

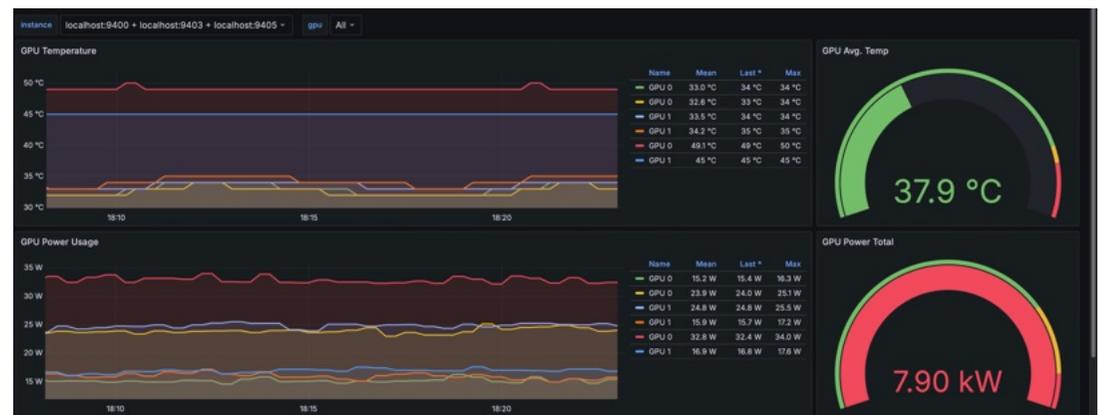
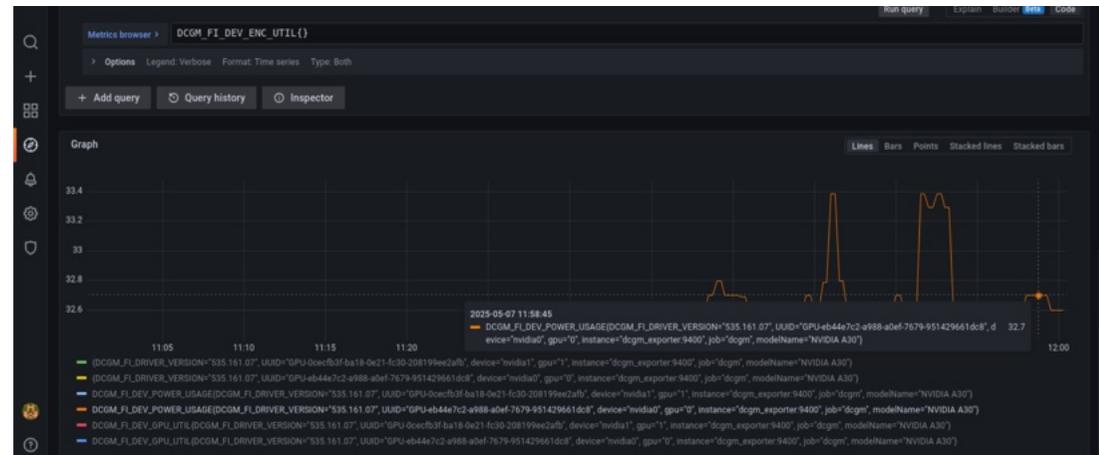


Sample pipeline	sharp_shannon	2023-09-06 19:50	london test	FAILED
	main.nf	4 min 24 s		
Sample pipeline	sleepy_morse	2023-09-06 19:46	london test	FAILED
	main.nf	2 min 49 s		

```
base glt:(main) a55 (0.821s)
clear
RNA-seq SUCCESS
ATAC-seq FAILED
Methylat FAILED
Methylat SUCCESS
Methylat SUCCESS
Methylat FAILED
```

```
base glt:(main) a55
nextflow run main.nf -profile aws -bucket-dir s3://temp-nextflow-runs --reads s3://test-fas
tq-pipeline/pe_test/ --output_dir s3://temp-nextflow-runs/results_pe_bwa --genome hg38 --al
igner bwa_meth --read_type PE --tags demo --tags london,test
```

Example usage: The Portal provided comprehensive workflow monitoring with real-time status tracking, resource utilization metrics, and process-level performance analysis for computational biology applications.



Comprehensive hardware monitoring dashboards display real-time GPU performance metrics including temperature, power consumption, and utilization trends for optimizing computational resource efficiency.

# Transform AI Integration with OrchAI™ Platform



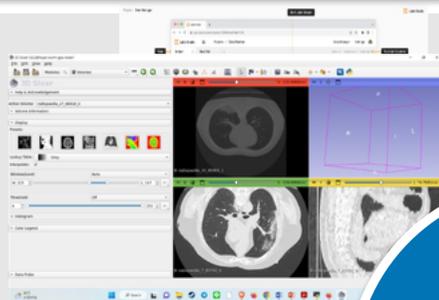
Unified Orchestration for Enterprise AI Operations

Data Integration → Model Selection → Monitoring → Optimization

## Quality Local Data Hub

Connect & Transform

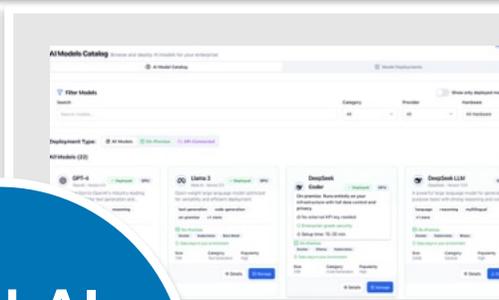
- Data Connectors
- ETL Pipeline
- Data Validation
- Real-time Sync
- Security Assurance



## One System, multiple AI

Store & Utilize

- Multi-model Registry
  - Version Control
  - RAG Integration
  - Model Marketplace

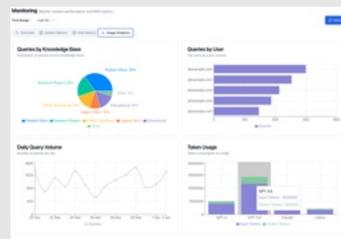


**OrchAI**  
One Stop  
Enterprise AI  
Platform

## Enterprise Security and Monitoring

Review & Improve

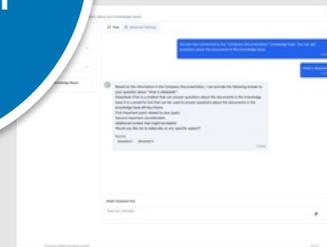
- Performance Metrics
- Cost Analysis
- Usage Tracking
- Real-time Alerts



## Interaction with your AI

Continues & Reproduce

- Workflow Engine
- Task Scheduling
  - Auto-scaling
- Pipeline Management



- ✓ **Rapid AI Deployment** - From concept to production in days
- ✓ **Data Security**: Your data stays within your control
- ✓ **Scalable Architecture**: Grows with your enterprise needs
- ✓ **Full Transparency**: Track every AI decision and interaction

# AI Models Catalog

AI Model Catalog | Model Deployments

**Filter Models**  Show only deployed models

Search:

Category: All | Provider: All | Hardware: All Hardware

Deployment Type:  All Models  On-Premise  API-Connected

## All Models (22)

<b>GPT-4</b> OpenAI • Version 4.0 API connection to OpenAI's industry-leading language model for text generation and... text-generation chat reasoning +1 more API OpenAI API Requires external API key Size: 175B   Category: Text Generation   Popularity: High Details   Manage	<b>Llama 3</b> Meta AI • Version 3.0 Open-weight large language model optimized for versatility and efficient deployment. text-generation code-generation on-premise +1 more On-Premise Docker Kubernetes Bare Metal Data stays in your environment Size: 70B   Category: Text Generation   Popularity: High Details   Manage	<b>DeepSeek Coder</b> DeepSeek • Version 2.0 Specialized coding assistant that understands multiple programming languages with exceptional... code-generation on-premise multi-language +1 more On-Premise Docker Ollama Kubernetes Data stays in your environment Size: 33B   Category: Code Generation   Popularity: High Details   Manage	<b>DeepSeek LLM</b> DeepSeek • Version 1.0.0 A powerful large language model for general-purpose tasks with strong reasoning and code... language reasoning multilingual +1 more On-Premise Docker Kubernetes Binary Data stays in your environment Size: 24GB   Category: General   Popularity: High Details   Deploy
<b>Qwen2</b> Alibaba Cloud • Version 2.0 Versatile multilingual model with enhanced performance for Asian languages, deployable on-... text-generation multilingual asian-languages +2 more On-Premise Docker Kubernetes Bare Metal Data stays in your environment Size   Category   Popularity	<b>Qwen-VL</b> Alibaba Cloud • Version 1.5 API connection to and vision capabilities... multimodal v... API Alibaba Cloud API Requires external API key Size   Category   Popularity	<b>Xinference Hosting</b> Xinference • Version 2.2 Size   Category   Popularity	<b>Yi-34B</b> 01 AI • Version 1.0 Size   Category   Popularity

One System, Multiple AI Models

- Dashboard
- Enterprise AI
  - AI Models Catalog
  - AI Deployments
  - Business AI Assistants
  - Knowledge Management
  - Data Connections
- Security & Compliance
  - Security Overview
  - Data Governance
  - Audit Logs
- Infrastructure
  - Compute Jobs
  - Applications
  - Terminal Access
  - System Status
- Monitoring & Analytics
  - System Monitoring
  - Usage Analytics
  - Performance Metrics
- Storage & Files
  - File Management
  - Storage Overview
- Billing & Administration
  - Sign Private and Confidential

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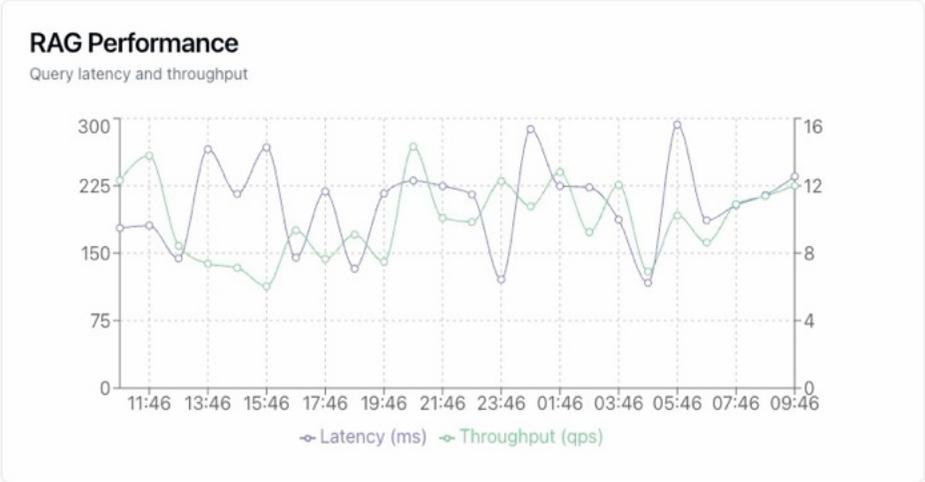
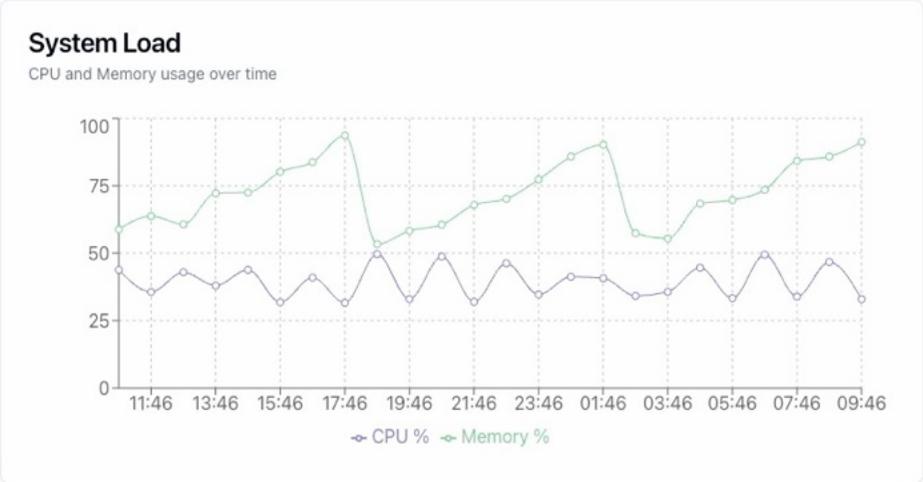
## Monitoring Monitor system performance and RAG metrics

Time Range: Last 24...

Refresh

- Overview
- System Metrics**
- RAG Metrics
- Usage Analytics

<p><b>CPU Usage</b></p> <p><b>32.9%</b></p> <p><small>-13.8% from last period</small></p>	<p><b>Memory Usage</b></p> <p><b>91.2%</b></p> <p><small>+5.4% from last period</small></p>	<p><b>Avg. Query Latency</b></p> <p><b>235 ms</b></p> <p><small>+21 ms from last period</small></p>
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# Performance and Usage Monitoring



- Dashboard
- Enterprise AI
  - AI Models Catalog
  - AI Deployments
  - Business AI Assistants
  - Knowledge Management
    - Knowledge Hub
    - Knowledge Base
    - Knowledge Workflows
    - Semantic Search
    - Data Governance
  - Audit Logs
- Infrastructure
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  - Storage Overview
- Billing & Administration
  - Sign out

## Welcome back!

Hello, root

System Status: Online

Tuesday, March 25, 2025 | 09:52 AM

### System Overview



### Platform Status



System Console

Help Resources

On-Premise Security

Available Models

AI Deployments

AI Agents

Data Connectors

## On-Premise Security Overview

Your data stays secure within your infrastructure

Fully Secured

**Data Encryption**  
256-bit AES encryption for all stored data

**Local Storage**  
All data remains within your network perimeter

**Access Control**  
Role-based access control with fine-grained permissions

**Audit Logging**  
Comprehensive audit trail for all system activities

## On-Premise Data Storage

All data stored securely within your infrastructure

Storage Type	Location	Size	Status
Document Store	Local		
Model Storage	Local		
User Data	Local	78 GB	Active

# Quality Local Data Hub

Total storage utilization

## Notifications

System alerts and status updates

3 actions needed 5 new

- All
- Action Required
- Info
- Security
- System

**Security Alert** high

Unusual login activity detected from a new device. Please verify if this was you.

1 hour ago

Take Action Mark as read

Admin notifications: 8

Settings Mark all as read



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## Data Connections Manage all data sources connected to your AI platform

Testing

Total Connections 🗄️

**6**

Active 🟢

**3**

Warnings 🟡

**1**

Issues 🔴

**1**

### Data Sources

Configure and manage connections to data sources

[+ Add Connection](#) [Refresh](#)

Name	Type	Status	Data Volume	Last Used	Authentication	Actions
<b>Cloud Data Warehouse</b> <small>Analytics data warehouse for business intelligence</small>	cloud	Active	1500 / 2000 GB	30 minutes ago	Service Account <small>Expires in Never</small>	⚙️ ↻ 🗑️
<b>Enterprise SQL Database</b> <small>Primary SQL database containing customer and product data</small>	database	Active	780 / 1000 GB	10 minutes ago	OAuth 2.0 <small>Expires in 29 days</small>	⚙️ ↻ 🗑️
<b>Document Storage</b> <small>Company document repository for manuals and guidelines</small>	file system	Active	340 / 500 GB	1 hour ago	API Key	⚙️ ↻ 🗑️
<b>CRM API Integration</b> <small>Connection to external CRM system via REST API</small>	api	Warning	45 / 100 GB	2 days ago	OAuth 2.0 <small>Expires in 2 days</small>	⚙️ ↻ 🗑️
<b>Public Knowledge Base</b> <small>Web scraping connection for public documentation</small>	web	Inactive	15 / 50 GB	1 week ago	None	⚙️ ↻ 🗑️
<b>Legacy Data Archive</b> <small>Historical data archive for compliance</small>	database	Error	890 / 1000 GB	3 days ago	Basic Auth	⚙️ ↻ 🗑️

### Connection Usage Overview

#### Usage Trends

Data transfer volume and query count over time

# Local Data Hub Integration

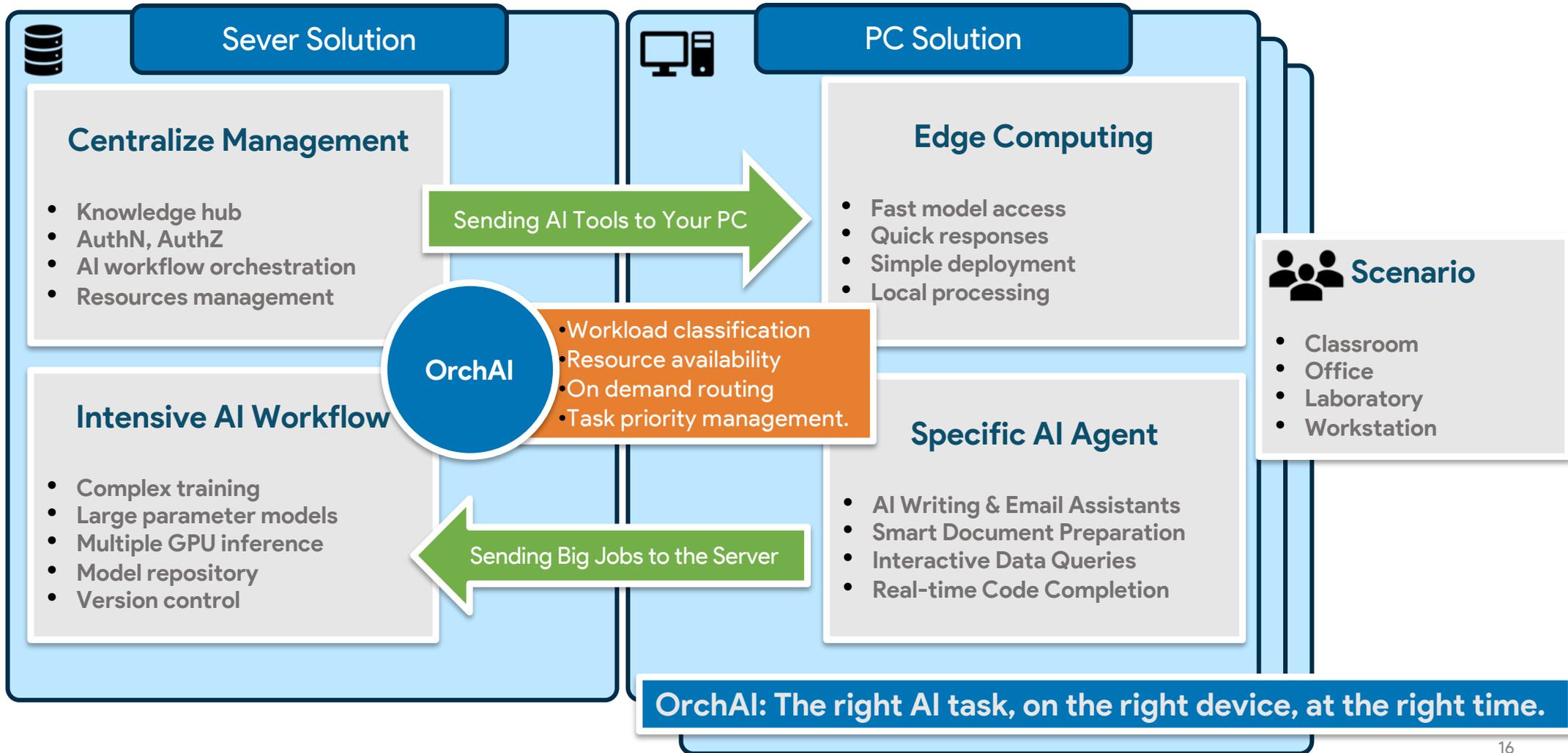
- Cloud Data Warehouse**  
3578 queries
- Enterprise SQL Database**  
1245 queries

15

45.8 GB

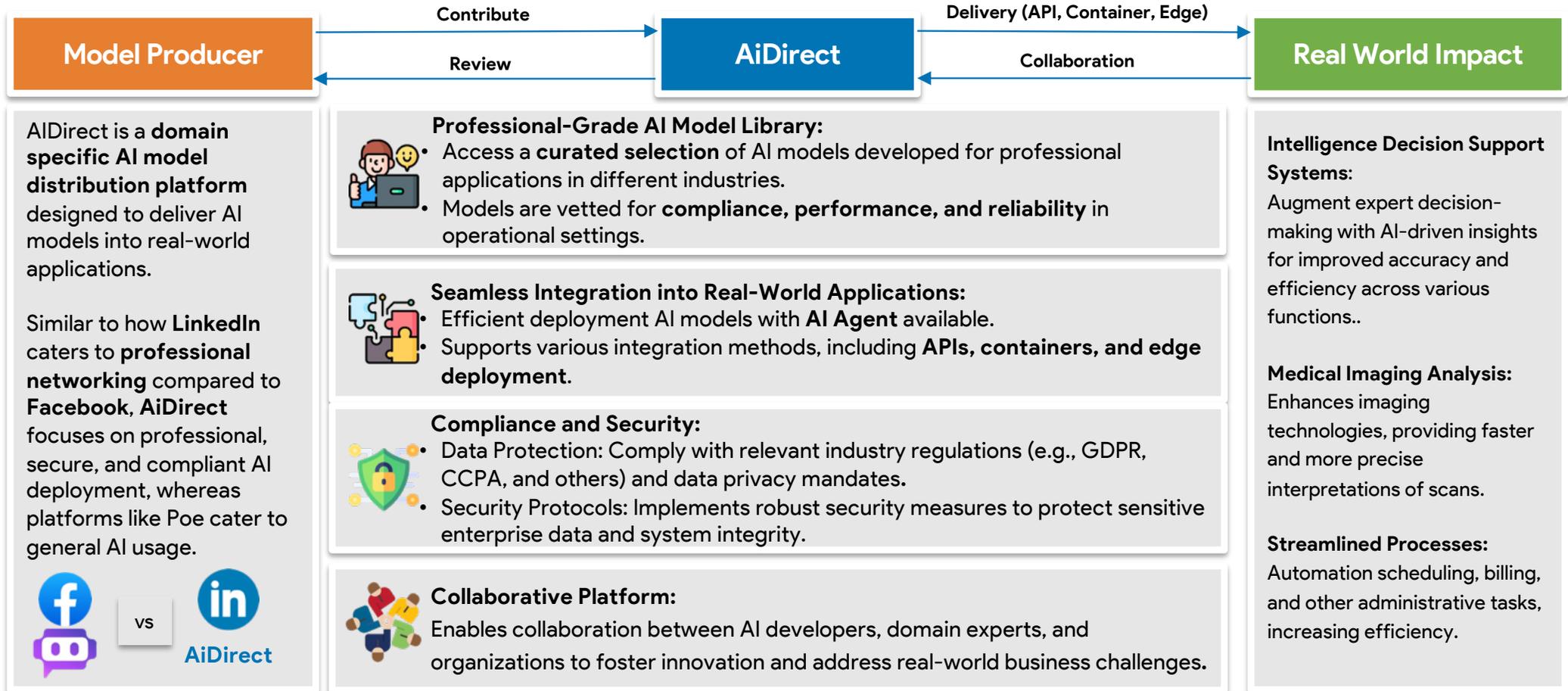
# OrchAI Hybrid Architecture: Intelligent Workload Distribution

Utilizing the resources to gain the greatest user experience in AI adoption



# The AiDirect™ – Deliver AI Models to Real-World Applications

The Professional AI Channel for Enterprise Innovation



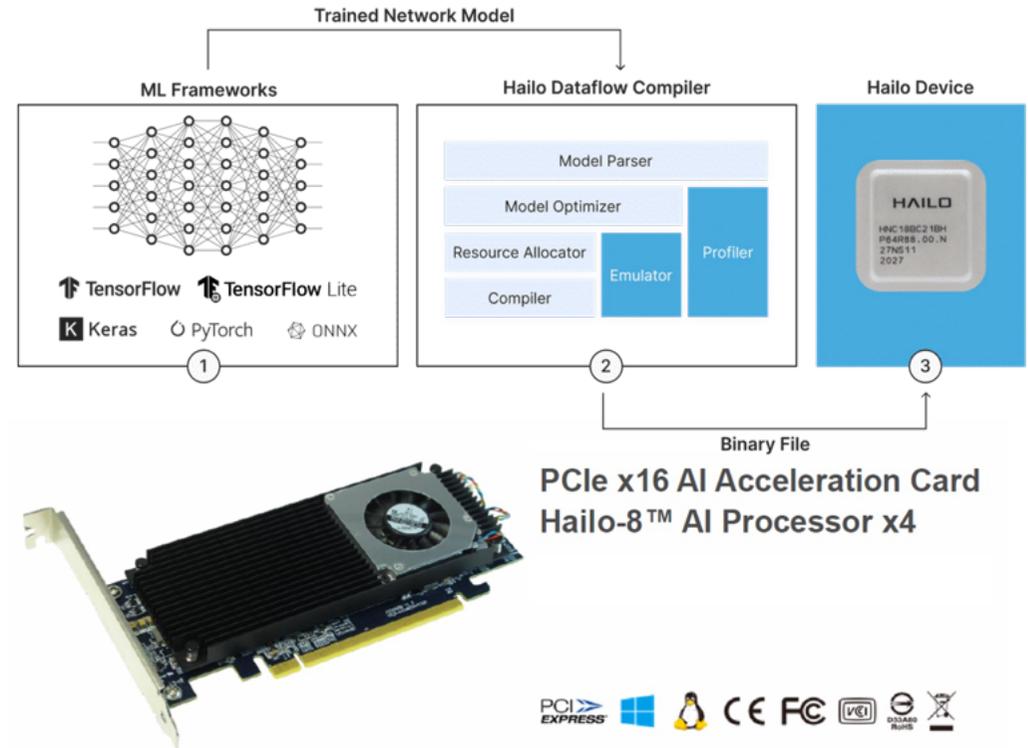
# Accelerating AI Deployment with Purpose-Built Edge Computing

Bringing AI to the Point of Care with Enterprise-Grade Performance

- **Customized Edge Devices** – e.g. optimized for medical imaging workloads
- **Real-Time Analytics** - 95% faster than traditional cloud processing
- **Secure Deployment** – on-premises and e2e encryption
- **Remote Management** - for enterprise-wide monitoring

## Traditional AI Deployment vs. Edge Approach:

	Traditional	AiDirect
Processing Time	Minutes	Milliseconds
Data Privacy	Network Risk	On-Premise
IT Complexity	High	Simplified
Deployment Cost	Per-Use	Fixed Cost



- ✓ **Future-Proof Investment:** Scale as AI models evolve
- ✓ **Reduced Bandwidth Costs:** Process locally, only send results to cloud
- ✓ **No Vendor Lock-in:** Standard ML framework compatibility
- ✓ **Simplified Compliance:** Streamlined data governance and auditing

# Our Dynamic AI Ecosystem: Driving Innovation & Rapid Industry Adoption



Making advanced AI accessible and rapidly deployable across industries.

HPC Consultancy → AI Implementation → System Integration → Frontend Support Services



(The Technology & Expertise Core)

- **Core Technology & IP:** AiHPC Portal, AiHPC Meter, OrchAI, AiDirect
- **Empowerment & Advanced Services:** Deep AI/HPC/domain expertise, solution architecture, specialized technical support
- **Market-Driven R&D & Co-Development:** Actively incorporates industry feedback and engages in joint R&D projects to enhance existing solutions and pioneer new ones.

**Strategic SI Partners**

(Market Access & Operational Excellence)

- Industry Qualification & Trust:
- Extensive Sales & Distribution Networks:
- Local Implementation & Integration:
- Frontend Support & Customer Management:

Tech & Expert

GTM, Delivery,  
Engagement

**Target Industries: Government, Finance, Healthcare, Education ...**

(Delivering Enterprise AI solutions fit to specific industry demand)

**Accelerated Time-to-Market:** Rapidly deploy proven, enterprise-grade AI solutions across industries.

**Scalable Delivery Models (B2B / B2B2C):** Flexible engagement delivering tailored solutions.

**Target Industries Served:** Providing specialized AI solutions to meet specific vertical needs.

**AiHPC's Technical Innovation + SI's Market Expertise = Accelerated Customer Success**

**AiHPC's core technology, amplified by SI partnerships and enriched by industry co-development, delivers continuously evolving AI solutions.**

# Founding Members

Pioneering Enterprise AI with Deep Technical and Market Expertise



**Sam Chu, Ph.D.**  
Chief Executive Officer,  
Founder

Sam Chu science and technology entrepreneur, serving as CIO for Sanomics Limited and ACT Genomics, overseeing a clinical trial on early-stage cancer detection using plasma DNA tests. Ensuring efficient data integration, storage, and analysis, they have also played a key role in developing the tele-oncology platform, Aurora Tele-Oncology, enabling remote cancer care during the pandemic.



**Sammy Tang**  
Chief Technology Officer,  
Co-Founder

Sammy Tang is a highly skilled professional with expertise in mathematical modeling, scientific problem-solving, HPC research, and clinical solution deployment. With a track record of managing engineering support science projects in areas such as data centers, air pollution studies, and ocean modeling, they have made significant contributions to research and development in various fields



**Mark Chang, D.Phil.**  
Chief Strategy Officer, Co-  
Founder

Mark Chang is a highly accomplished individual with a strong background in healthcare, technology, and government initiatives in Taiwan. With roles such as Taiwan Managing Partner, Assistant Professor, Committee Member, and Chief Information Officer, he contributes significantly to the advancement of healthcare and technology integration in Taiwan..

**Hong Kong • Taiwan • Singapore**

**Providing local support with global standards across key Asian technology and healthcare hubs**

# Summary: Total Solution of Cloud/HPC/AI

