AMBER | AGILE ROBOTS

CASE STUDY

How DGX Systems Supercharge Agile Robots' Prototyping Process

From Concept to Reality

NVIDIA Elite Partner

COMPANY BACKGROUNDS

Technology Excellence in Action

AMBER and Agile Robots: A Look at two technology pioneers transforming the AI landscape

AGILE ROBOTS

Agile Robots SE is an international high-tech company based in Munich, Germany, with more than 2,300 employees worldwide. Their mission is to bridge the gap between artificial intelligence and robotics by developing systems that combine state- of-the-art force-moment sensing and world-leading image processing technology. This unique combination of technologies allows them to provide user-friendly and affordable robotic solutions that enable intelligent precision assembly.

AMBER

AMBER AI & Data Science Solutions GmbH is a leading provider of cutting-edge full-stack AI solutions and high-performance computing. As an NVIDIA Elite Partner, AMBER collaborates with industry leaders to deliver state-of-the-art, tailored solutions that accelerate innovation and reduce costs. With ISO-certified quality standards, AMBER ensures reliability and excellence in every project. Founded in 2006 as FluiDyna, AMBER has been at the forefront of artificial intelligence innovation since 2008.

BREAKING BARRIERS IN ROBOTICS

Challenges Facing the Industry

The robotics industry is rapidly evolving, with projections estimating a market size of around $125 billion by 2030 (Statista). As the field continues to expand, companies in this space face several critical challenges that impact their ability to deliver advanced AI-driven solutions.

One major challenge is development speed. Many organizations encounter limitations due to insufficient local infrastructure for prototyping, leading to a reliance on cloud systems. This dependency can extend development timelines, transforming what might otherwise take days into weeks, while also driving up operational costs. Reports from McKinsey indicate that companies utilizing advanced analytics and AI can increase productivity by up to 40%, highlighting the importance of streamlining development processes (McKinsey & Company).

Another pressing issue is data privacy and training efficiency. The development of AI models often involves handling sensitive industrial data, creating a need for localized solutions that ensure secure model training. This challenge is widespread across the robotics sector, where 60% of companies report difficulties in balancing data sovereignty with scalable infrastructure (Capgemini Research).

Finally, the growing demand for scalable and user-friendly applications presents an additional obstacle. Industries such as manufacturing and logistics require AI tools that are both easy to deploy and capable of managing complex tasks. To address this, robotics companies are striving to develop solutions that empower system integrators to effectively scale and implement robotic technologies.

"Data privacy and scalability are no longer trade-offs. NVIDIA DGX allows our customers to train AI models locally, securely, and at unmatched speed."

Michael Rechenmacher, CEO of AMBER

AMBER

CHALLENGES

Breaking Barriers: The Challenges Holding Back Agile Robots

Understanding the roadblocks to innovation

Reliance on Cloud Services

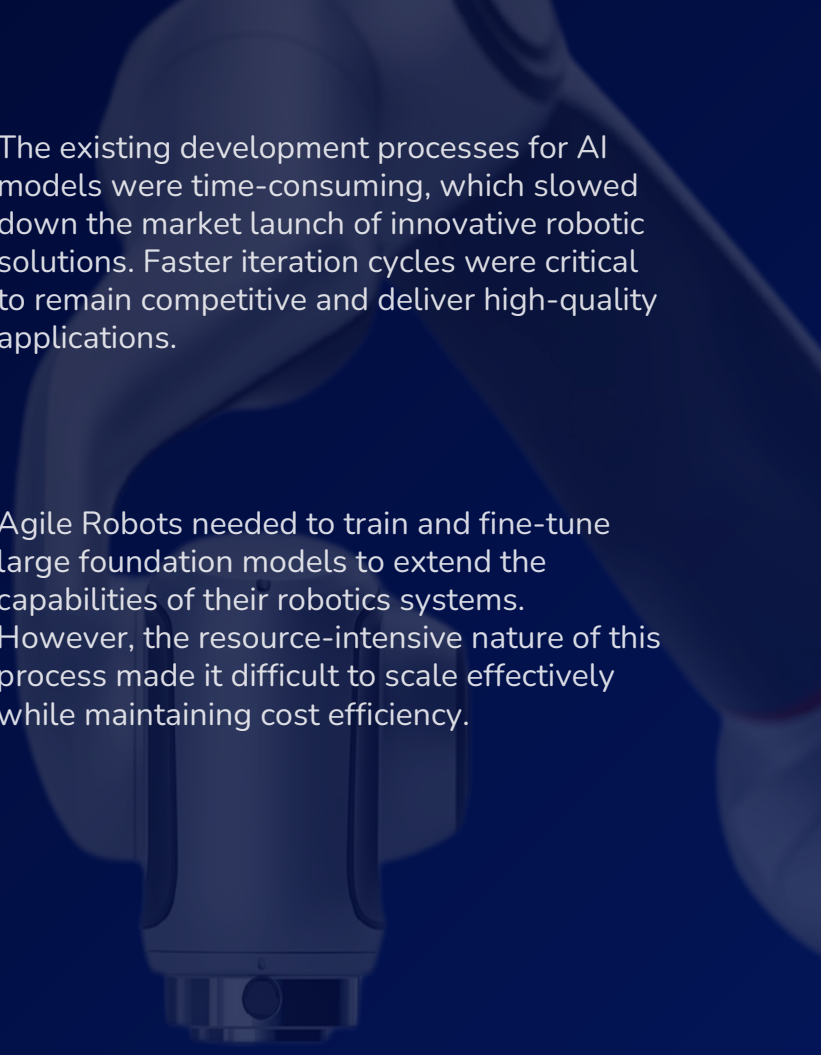
Agile Robots faced significant challenges due to their dependency on cloud-based resources during the initial stages of AI model development. This reliance resulted in high operational costs and slower workflows, particularly in prototyping phases.

Slow Iteration Cycles

The existing development processes for AI models were time-consuming, which slowed down the market launch of innovative robotic solutions. Faster iteration cycles were critical to remain competitive and deliver high-quality applications.

Scalability and Efficiency

Agile Robots needed to train and fine-tune large foundation models to extend the capabilities of their robotics systems. However, the resource-intensive nature of this process made it difficult to scale effectively while maintaining cost efficiency.



NEEDS

Paving the Way Forward: What Agile Robots Needs to Succeed

Laying the foundation for innovation

Efficient Local Computing Power

Agile Robots required robust infrastructure to develop AI models faster on-premises, minimizing reliance on expensive cloud services.

Accelerated Development and Iteration Cycles

To improve productivity and reduce time-to-market, Agile Robots needed solutions that enabled quicker testing, refining, and deployment of AI models.

Scalable Infrastructure for Foundation Models

The company sought powerful systems to train and fine-tune large AI models both locally and in the cloud, ensuring seamless integration into their robotic systems.

Reliable Partners for Implementation and Support

To streamline the deployment of advanced computing systems and ensure consistent scaling, Agile Robots needed a trusted partner for infrastructure implementation and ongoing support.

AMBER'S SOLUTION

Powering Robotics with Tailored AI Solutions

Meeting the requirements for prototyping, local training, and scalable AI tools

Agile Robots partnered with AMBER to ensure the availability of high-performance solutions critical to overcoming their challenges.

With local NVIDIA DGX infrastructure, Agile Robots accelerated AI prototyping, cutting development timelines from weeks to days. This on-site availability eliminated reliance on cloud systems, reduced costs, and enabled faster iterations.

For training, localized resources gave Agile Robots full control over sensitive data while boosting efficiency and scalability. Models could now be refined faster and with greater precision.

Finally, NVIDIAs hardware helped develop scalable, user-friendly AI tools tailored to system integrators, simplifying deployment and enabling the adoption of robotics across industries.

By ensuring infrastructure and tools were always available, AMBER empowered Agile Robots to stay competitive and innovate faster.

Reasons for DGX

- Maximize developer productivity
- Delivering constant uptime
- Faster time-to-first-train
- Reliable AI infrastructure

AMBER'S SOLUTION

Powering Robotics with Tailored AI Solutions

Meeting the requirements for prototyping, local training, and scalable AI tools

Agile Robots partnered with AMBER to ensure the availability of high-performance solutions critical to overcoming their challenges.

With local NVIDIA DGX infrastructure, Agile Robots accelerated AI prototyping, cutting development timelines from weeks to days. This on-site availability eliminated reliance on cloud systems, reduced costs, and enabled faster iterations.

For training, localized resources gave Agile Robots full control over sensitive data while boosting efficiency and scalability. Models could now be refined faster and with greater precision.

Finally, NVIDIAs hardware helped develop scalable, user-friendly AI tools tailored to system integrators, simplifying deployment and enabling the adoption of robotics across industries.

By ensuring infrastructure and tools were always available, AMBER empowered Agile Robots to stay competitive and innovate faster.

"The DGX systems support our business by enabling rapid prototyping and refinement of AI models within local infrastructure. By reducing reliance on cloud services early in the development process, we save costs associated with extensive remote compute usage."

Dr. Zhaopeng Chen, Founder, CEO & Executive Director

RESULTS

Driving Results That Matter

Faster workflows, smarter tools, and scalable robotics solutions delivering real-world impact

The NVIDIA DGX Hopper cluster delivers 6X more performance and 2X faster networking compared to the previous DGX generation, enabling Agile Robots to accelerate prototyping cycles and train AI models at unprecedented speeds. These performance gains empower the team to tackle larger, more complex workloads, from generative AI and natural language processing to deep learning recommendation systems, with ease.

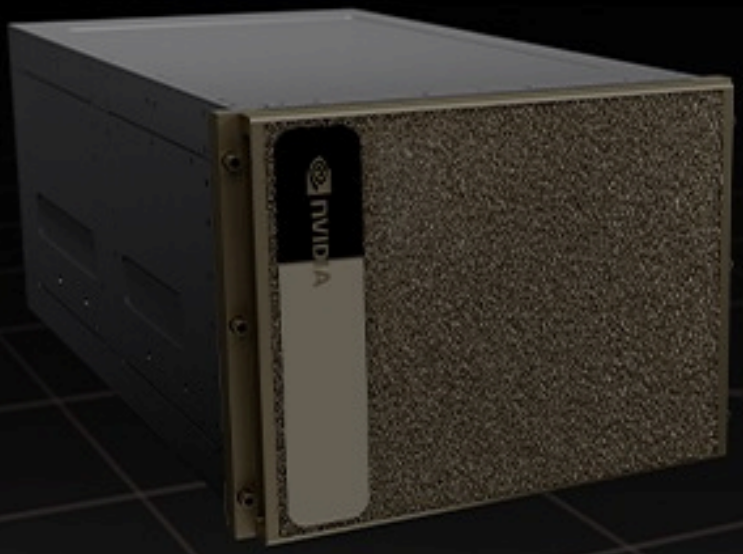
The flexible deployment options of the DGX Hopper cluster allow Agile Robots to operate on-premises, maintaining full control over sensitive industrial data while scaling operations seamlessly. With ongoing support from NVIDIA DGXperts, the team ensures that their AI infrastructure is continuously optimized for maximum performance, minimizing downtime and expediting time-to-market for their innovative solutions.

These advancements have positioned Agile Robots at the forefront of AI-powered robotics, enabling them to deliver faster, smarter, and highly scalable applications that are transforming industries such as manufacturing, logistics, and beyond.

6X GPU PERFORMANCE*

2X NETWORK PERFORMANCE*

+50% GPU-TO-GPU BANDWIDTH*



*Compared to previous generations

AMBER'S SOLUTION

Powering Robotics with Tailored AI Solutions

Meeting the requirements for prototyping, local training, and scalable AI tools

Fast & Local Prototyping

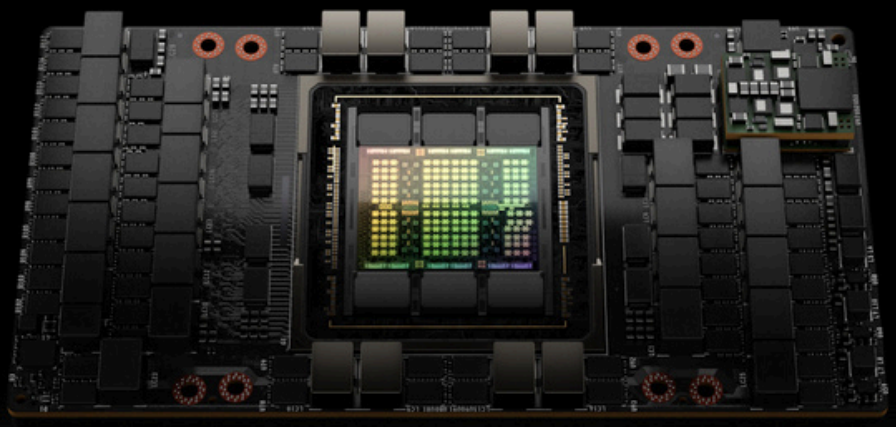
Agile Robots needed a solution to rapidly prototype AI models without relying on cloud infrastructure. By leveraging local NVIDIA DGX systems, they can efficiently test and refine models for seamless integration into robotic systems.

Train AI Models Locally

To reduce dependency on cloud environments, Agile Robots required an infrastructure capable of training AI models directly on-site. This ensures flexible development while maintaining control over data and processes.

AI Tools for System Integrators

System integrators require accessible and reliable AI applications to streamline the setup of robotic systems. Agile Robots develops specialized tools that cater to these needs, making robotics integration faster and more efficient.



AMBER

BENEFITS

Redefining Robotics with AI

From faster prototypes to Increased productivity and market leadership

Accelerated Prototyping

NVIDIA DGX systems enable Agile Robots to iterate AI models quickly and efficiently. Faster prototyping means more time for testing and refining robotics applications, significantly reducing development cycles.

Greater Data Control

By training AI models on local DGX infrastructure, Agile Robots gains full control over the development process. This localized approach ensures faster iterations, improved security, and less reliance on external cloud services.

Optimized Costs

The ability to train and refine AI locally reduces cloud-related expenses during the early development phases. Agile Robots can allocate resources more effectively while still delivering high-quality applications.

Improved Model Performance

Using NVIDIA DGX systems, Agile Robots fine-tunes foundation models, improving accuracy and reliability. These advancements allow the company to deliver superior AI-powered tools for robotics applications.

Improved Productivity

With faster prototyping and local model training, Agile Robots can streamline workflows, optimize processes, and achieve higher efficiency. These productivity gains free up time and resources for innovation, enabling the team to focus on pushing the boundaries of robotics development.

Improved Competitiveness

The advanced AI infrastructure and tools provided by AMBER and NVIDIA give Agile Robots a competitive edge in the global robotics market. Faster delivery, cost optimization, and cutting-edge applications ensure that Agile Robots stays ahead of industry demands.

TESTIMONIALS

Voices

Insights from Agile Robots, AMBER & NVIDIA on the transformative impact of NVIDIA DGX technology:

AGILE ROBOTS

"The cooperation with AMBER has been very valuable for Agile Robots as we have been able to ensure rapid delivery and implementation of the systems and receive ongoing support for scaling. In addition, AMBER's network helps us to gain further expertise."

Dr. Zhaopeng Chen, Founder, CEO & Executive Director

AMBER

"Working with Agile Robots showcases how the latest AI infrastructure can drive innovation. By deploying NVIDIA DGX H100 systems and providing tailored support, we're proud to assist such an innovative company with our expertise."

Michael Rechenmacher, Founder, CEO

NVIDIA

"The cooperation with AMBER has been very valuable for Agile Robots as we have been able to ensure rapid delivery and implementation of the systems and receive ongoing support for scaling. In addition, AMBER's network helps us to gain further expertise."

XXXXXX

CONTACT

Your Contact for More Information

AMBER AI & Data Science Solutions GmbH

Grünwalder Weg 32
D-82041 Oberhaching

T +49 89 413 2733-00
F +49 89 413 2733-09
E info@amber.eu