



# Revolutionizing the global farming industry with AI-powered solutions at the edge

How Serket is empowering farmers across the globe to maximize their operations through AI-powered livestock monitoring using Lenovo ThinkSystem SE350 Edge Servers powered by Intel® Xeon® processors and NVIDIA® T4 GPUs.

Lenovo Infrastructure Solutions  
for The Data-Centered

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1

## Background

Livestock farming is an essential ingredient in keeping a growing world population fed. But the global agriculture community is facing a major threat: antibiotic resistance.

Due to limited budgets and labor shortages, farmers often struggle to intervene early enough when an animal falls ill, which leads to the use of antibiotics to treat illnesses. The problem? When used excessively in farming, antibiotics can lead to antibiotic-resistant bacteria, or 'superbugs', which are extremely difficult to treat in animals.

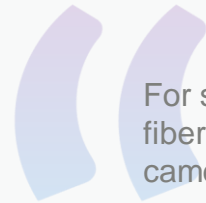
At the forefront of the fight to minimize antibiotic use and preserve livestock health is Netherlands-based technology company, Serket. Their innovative solution uses artificial intelligence (AI) to analyze real-time camera feeds to monitor changes in animal behavior and detect potential health problems in livestock, enabling farmers to intervene rapidly—greatly reducing the need to use antibiotics. With this technology, farms across the globe are shrinking mortality rates and reducing both feed and veterinary costs.

Kristof Nagy, Founder & CEO at Serket, highlights the impact of their solution, “We saw a major opportunity to transform the process for the good of the farming industry, livestock, and people everywhere. Our solution allows animals to be monitored 24/7. If we detect patterns of behavior that are consistent with illness—for example, pigs drinking more than usual or moving abnormally—we can immediately alert the farmers, so they can take targeted action quickly and avoid the need for drugs.”

2

## Challenge

Serket's AI solution runs on the cloud, and at the time it required high-speed internet connection to run smoothly. But, given that farming takes place primarily in remote areas, Serket encountered a major roadblock as they realized that their solution may not be accessible to many of their prospective clients. How could they successfully deliver their services to farmers across the globe?



For some of our clients, the availability of high-speed broadband and fiber internet connections on the farm allows us to analyze real-time camera feeds using the cloud. To serve prospects in more remote areas, we began exploring other technology solutions.”

**Kristof Nagy**  
Founder & CEO, Serket



## Taking edge solutions to remote areas

Serket was seeking a partner that was agile, cost-effective, and most importantly, could help them scale globally. With these goals guiding their search, they were led to edge computing as their solution.

Kristof Nagy recalls, “We aim to scale up our operations across the USA and China over the next four years—with the ultimate objective of becoming the global leader for livestock monitoring across all animal species. The ability to run some compute workloads for our AI solution at the edge will be critical to make the most effective use of limited connectivity in many parts of the world.”

Since its foundation, Serket has partnered with NVIDIA® to develop and run the AI solution, so it only made sense to leverage their expertise to find the right edge computing provider. After evaluating several providers, the team selected Lenovo to help configure an edge solution that met the operational needs of their AI and machine learning technologies.





## Deploying rapidly, scaling seamlessly

In partnership with local Lenovo Platinum Business Partner, HET IT, we quickly implemented Lenovo ThinkSystem SE350 Edge Servers, equipped with NVIDIA® T4 GPUs, as Serket's technology platform.

Kristof Nagy comments: "Deploying the Lenovo edge solutions couldn't be simpler—the technology is essentially plug-and-play, and we rarely need to call on Lenovo or HET IT to provide technical support. But if we do ever have a question, we know the help we need is only a phone call or an email away."

The new edge solutions were designed to set Serket up for ultimate success—integrated with 10 GbE network controllers, the solutions run the Ubuntu Linux operating system and the platform for Serket's solution based on Docker containers with NVIDIA CUDA®, NVIDIA DeepStream SDK, NVIDIA TensorRT, and the Kubeflow machine learning platform.

Today, Serket has successfully deployed the Lenovo and NVIDIA edge solutions to nearly half of its client base, helping farms everywhere benefit from timely insights into their animals' health.



Farm environments can be humid, dusty, and hot, which means any technology we deploy there must be robust enough to withstand relatively harsh conditions. With rugged Lenovo ThinkSystem SE350 Edge Servers equipped with NVIDIA T4 GPUs, we have peace of mind that our AI-powered solution for livestock management will run 24/7."

**Kristof Nagy**  
Founder & CEO, Serket



In addition to the reliability, performance, and robustness of their edge solutions, we were very impressed by Lenovo's commitment to our success. Lenovo went out of their way to help us configure an edge solution that met the specific operational needs of our AI and machine learning technologies."

**Kristof Nagy**  
Founder & CEO, Serket

3

## Results

Thanks to the robust edge solutions delivered by Lenovo and NVIDIA, Serket is effortlessly scaling its innovative offering across the globe.

“Unlike a pair of human eyes, our monitoring solution can keep watch over livestock 24/7, and detect health issues with up to 95% accuracy,” says Kristof Nagy. “Crucially, our AI and machine learning technologies deliver this insight extremely cost-effectively, while also saving farmers money by allowing earlier—and therefore cheaper—health interventions. As a result, we are helping farmers boost their profit margins by an average of 15%.”

With their solution in place at 40 farms, Serket currently provides real-time monitoring for millions of animals—helping boost sustainability in global agriculture as they combat the risk of antibiotic resistance.

Serket optimistically looks ahead to the future as their resilient edge solutions allow them to continue their expansion.



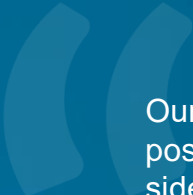
**Enabling real-time monitoring for millions of animals**



**Detecting health issues with up to 95% accuracy**



**Boosting farming profit margins by an average of 15%**



Our business has already doubled in size in the last 12 months, and we're in a strong position to continue to drive fast-paced expansion. With Lenovo and NVIDIA® at our side, we're poised to grow our share of a global livestock health management market valued at €400 billion. We look forward to continuing our collaboration with Lenovo and NVIDIA® to minimize the use of antibiotics in agriculture, reduce costs for farmers, and contribute to greater animal welfare."

**Kristof Nagy**  
Founder & CEO, Serket





## Where will you scale with AI and edge computing?

The Data-Centered are changing the world one innovation at a time. Discover how Lenovo's edge computing solutions can help you take your innovation to the right places.

[Explore Edge Computing Solutions](#)

[Explore AI Solutions](#)

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