Taking safety to new heights by speeding things up at the edge.

How Addfor is using AI technology to strengthen public health measures with a Lenovo ThinkSystem SE350 server, powered by NVIDIA® T4 Tensor Core GPUs.

Lenovo Infrastructure Solutions for The Data-Centered

1

Background

At the end of the day, every business wants to leave the world a better place than they found it. At Addfor, improving the world is exactly what inspires their work. Headquartered in Turin, Italy, Addfor tackles industrial and social challenges by constantly pushing the frontiers of AI, data science, and edge computing through research and development.

When the COVID-19 pandemic spread across the globe, life changed overnight. Safety became the world's #1 concern, and tools like contract tracing, face coverings, and social distancing became the new normal.

As these tools proved vital in the fight against the coronavirus, public health officials were confronted with a tricky reality: these life-saving measures would only be effective if the community chose to use them.

Inspired to help governments and local authorities, Addfor was ready to join the fight, and they had just the right solution to help them strengthen their defense against COVID-19.

2

Challenge

This is where Addfor's crowdHEDGE solution came in.

Enrico Busto, Founding Partner & CTO at Addfor, explains: "Measuring compliance with COVID-19 public health measures poses a huge challenge for authorities. We set out to develop an AI-enabled image recognition system that could be used in the fight against coronavirus."

With crowdHEDGE, the city of Turin would now be able to precisely measure the effectiveness of COVID-19 measures. By interfacing crowdHEDGE with drone video streams, Addfor could extract data insights on public spaces – allowing Turin public health officials to track crowd sizes, foot traffic, and other data by time and geographic region. Ultimately, this empowered the City of Turin to make data-driven decisions surrounding public health measures.

While crowdHEDGE was the ideal solution for the City of Turin, processing and streaming large quantities of data in real time wasn't easy to do. So, how could Addfor overcome the technical feat of processing vast amounts of data rapidly while keeping costs down on behalf of the city?

Soaring to the next level of innovation

Solving this challenge was critical. After all, the safety of Turin's citizens depended on it.

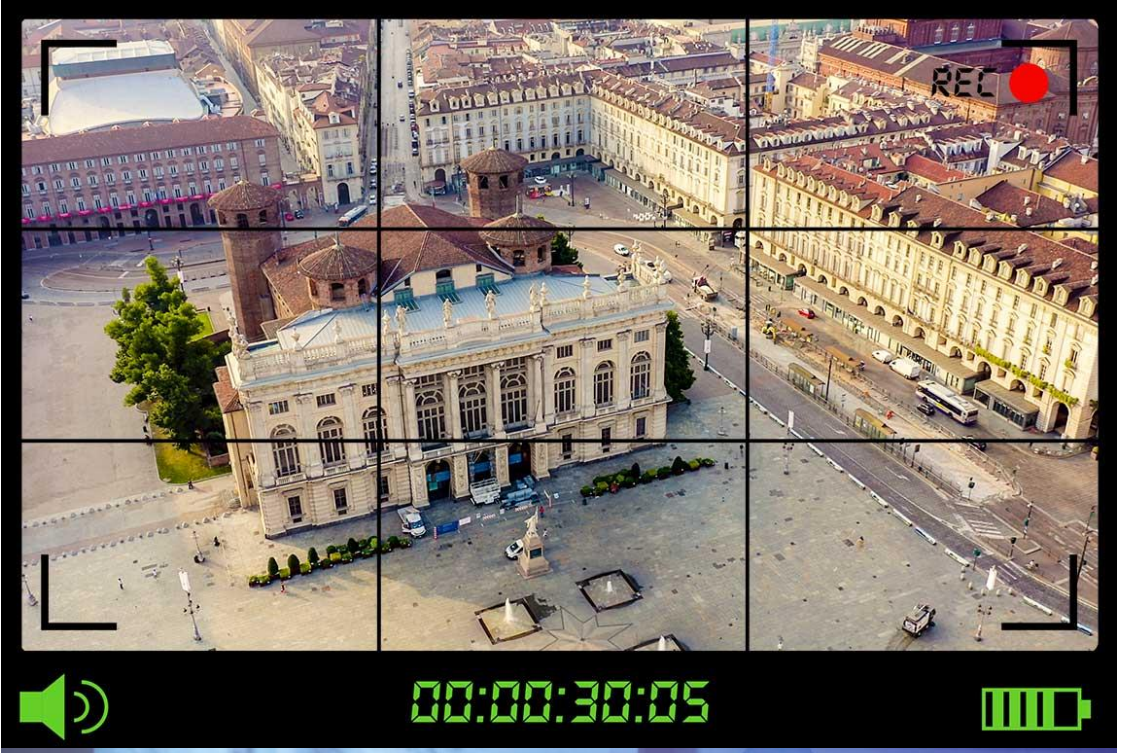
Addfor knew what they needed: a partner that could provide a cutting-edge computing solution to maximize the agility and overall performance of crowdHEDGE. Addfor also knew what they wanted: a partner who was equally passionate about protecting communities in such a critical time.

Lenovo checked both of those boxes.

Through our new partnership, Addfor gained access to our global Lenovo AI Innovation Centers (AIICs). The AIICs quickly prove out technology concepts and real-world use cases for AI, which was perfect for helping Addfor quickly lift crowdHedge off the ground.

Because Lenovo is always enhancing their data center solutions, we can take advantage of the latest advances in AI and edge computing and stay at the bleeding-edge of the discipline.”

Enrico Busto
Founding Partner & CTO, Addfor



Launching next-generation edge for today's challenges

The crowdHEDGE pilot in Turin required an Edge solution that could handle both the AI workload and drone deployment. So, together with Addfor, an NVIDIA Metropolis partner, we implemented a Lenovo ThinkSystem SE350 edge server, equipped with NVIDIA® T4 Tensor Core GPUs.

The Lenovo ThinkSystem SE350 is a purpose-built, ruggedized, highly secure edge server specifically designed to support the computing, storage, and connectivity requirements at the edge – making it the perfect solution for the crowdHEDGE.

"Processing and analyzing data at the edge reduces traffic load and improves performance," says Busto. "The Lenovo ThinkSystem SE350 is therefore the ideal solution for this project. It's a small, rugged, ultra-reliable server that enables us to collect, process, and analyze vast amounts of video data rapidly, close to the source."

With added built-in WiFi connectivity, we enabled Addfor to wirelessly and securely stream video data directly from the edge where the video was captured. Not to mention, the Lenovo ThinkSystem SE350 is the most compact server to deliver NVIDIA T4 GPUs, making it a performance leader for edge AI workloads that demand the highest performance.

"We were particularly impressed with the support for NVIDIA T4 GPUs, which made the Lenovo ThinkSystem SE350 perfectly suited to our needs," comments Busto. "For example, GPU-acceleration for analytics workloads enables us to calculate the number of people present in a given area in real time."

With a new server in place, we could guarantee a high-performance flight for the crowdHEDGE pilot, allowing Turin public health officials to gather precise data during every flight.

“The Drones Unit of the City of Turin has successfully tested, within the services of the Public Administration, the use of drone, AI, and edge computing solutions with the collaboration of Lenovo, NVIDIA, and Addfor. The use cases developed are related to the real-time analysis of data, which are useful for the development of innovative services for citizens. Thanks to this pilot project in the field of safety and security of public spaces, the City of Turin addresses the combined use of drones, AI, and edge computing to focus on urban and aerospace mobility as an opportunity for the use of AI within the Public Administration.”

Marco Pironti
Deputy Mayor Innovation and
Smart City, City of Turin

3

Results

Today, backed by Lenovo and NVIDIA technology, Addfor continues to help the authorities in Turin monitor compliance with COVID-19 related public health policies.

The crowdHEDGE solution can calculate the approximate distance between individuals and identify the frequency of risky social contacts based on the size of each gathering and the amount of time spent together. This will help prevent overcrowding in business and in public settings as the world continues to combat the spread of the coronavirus.

Right now, crowdHEDGE fights against the spread of COVID-19, but our collaboration has opened the door to a wide range of other applications, like helping local police keep citizens safe, for instance.

Now, we look forward to growing our partnership to continue pushing the frontier of data science and innovation with Addfor.

- **Enables wireless streaming of drone video footage at the edge**
- **Reduces traffic load and improves performance for real-time data analysis**
- **Helps local authorities to measure compliance with COVID-19 public health measures**

We’re excited to continue developing cutting-edge AI and edge computing solutions supported by Lenovo and NVIDIA. We’re confident that our partnership will play an important role in pushing the frontiers of data science innovation.”

Enrico Busto
Founding Partner & CTO, Addfor

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