Education

Protecting staff and students with AI at the edge

La Jolla Country Day School

While serious incidents in schools are incredibly rare, LJCDS wants to be prepared for every eventuality. To protect students and staff, the school installed an AI-driven threat-detection system at its campus running on the Lenovo ThinkEdge platform, powered by Qualcomm® Cloud AI 100—driving 83% faster responses to potential incidents.

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AI Innovators
Partus Ecosystem

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Who is La Jolla Country Day School?

Initially founded in a one-room cottage in 1926, La Jolla Country Day School (LJCDS) now runs a state-of-the-art campus spread across 24 acres and supports over 1,180 students and 240 employees. The school is committed to providing a high-quality education that instills intellectual curiosity and social responsibility as key values in all elementary, middle, and high school students.

LA JOLLA
COUNTRY DAY SCHOOL
Inspiring Greatness for a Better World

1926

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The
Challenge

Parents rightly expect that their children will always be safe in school, and protecting students and staff from harm is the number one priority of every school board. While incidents of harm in educational settings are incredibly rare, LJCDS was keen to prepare an effective response to a range of scenarios—from unauthorized vehicles or individuals entering the campus to potentially hazardous crowding on campus.

LJCDS asked a leading security company to complete a full review of its grounds. The security review showed that the school already had excellent measures in place, with guards stationed at entrances, an extensive camera network, and robust policies and procedures. The review provided advice on how the school could step up this protection. For instance, while LJCDS had many cameras around the school, guards only watched them during specific periods—creating a risk that an unauthorized entry could go unnoticed.

Focusing on learning

Gary Krahn, Head of School at LJCDS, says: "Making students feel safe and supported is vital to creating a positive learning environment. We wanted to find the right balance between ensuring rock-solid security and also creating an open, welcoming learning environment."

LJCDS reached out to security specialists Kognition to explore how it could harness artificial intelligence (AI) to shore up its defenses. Kognition, an independent software vendor (ISV) partnered with Qualcomm Inc. and a partner in the Lenovo AI Innovators Program, explained how the school could transform its extensive security camera estate into smart sensors with the ability to recognize threats using advanced image analysis technology. To achieve this, the school looked for a powerful IT infrastructure to support compute-intensive AI workloads.

"We knew that AI had the potential to help us identify threats much more consistently and efficiently. So, we targeted an IT infrastructure that was powerful enough to support this new technology and cost-effective and energy-efficient enough to be affordable in the long run."

Kevin D. Worth
Assistant Head of School for Operations,
La Jolla Country Day School

Next-level perimeter surveillance

To transform its existing security camera estate into AI-powered smart sensors, Kognition installed its proprietary Kognition AI solution at LJCDS on a Lenovo ThinkEdge SE450 platform.

Equipped with Qualcomm Cloud AI 100 Accelerators, the Lenovo ThinkEdge device delivers unprecedented visual computing performance while also providing revolutionary neural graphics and AI capabilities to accelerate LJCDS's real-time computer vision workloads—delivering up-to-the-second security insights.

Hardware
Lenovo ThinkEdge SE450
Qualcomm Cloud AI 100
Accelerators

Software
Kognition AI

Finding and preventing threats

In addition, Qualcomm Cloud AI 100 inference accelerators are specifically designed for high performance, low power inference acceleration. For this application, the Cloud AI 100 delivered four times better performance compared to its closest competitor, and at a more efficient total cost of ownership. The Qualcomm solution is also widely compatible with cloud platforms, offering excellent power efficiency and scalability.

Kognition AI helps LJCDS to use its legacy security camera estate to actively scan every inch of its campus for potential threats 24/7. Cutting-edge image analysis capabilities—including license plate recognition—can automatically detect when an unauthorized vehicle or individual is on campus, and can even see when somebody may be armed.

Whenever Kognition AI detects danger, it immediately alerts key decision-makers at LJCDS via mobile app so they can verify potential issues and take action. Furthermore, Kognition AI automatically detects the movement of people within the school and alerts security staff when hazardously large crowds may be forming.

"With Kognition, Lenovo, and Qualcomm technology, we get a level of surveillance that would be prohibitively costly if we had to rely on traditional security solutions. What's more, because the Lenovo ThinkEdge platform is so robust and reliable, we know that we can always count on it to help us protect our students and staff."

Gary Krahn
Head of School, La Jolla Country Day School

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Results

Since the initial solution deployment, LJCDS has installed a small number of additional cameras to provide full coverage of school grounds. In total, the school now has 125 cameras constantly watching its campus for possible dangers. What's more, the school has achieved a 90% accuracy rate for image analysis—minimizing false-positive alerts.

If a serious incident occurs, every second counts. With Kognition and Lenovo technology underpinning school security, LJCDS can respond to threats and hazards over 83% faster—dramatically reducing the risk of harm to staff and students.

✓ 125 cameras constantly scan for potential threats

✓ 90% accuracy rate on image analysis reduces false positives

✓ 83% faster response time to potential threats

✓ Reduces total cost of ownership by leveraging legacy security cameras

Always-on surveillance

By harnessing the power of AI with Kognition, Qualcomm and Lenovo solutions, LJCDS has stepped up its security far beyond the capabilities of any traditional human-led security team—and at an affordable cost.

"With the Kognition, Qualcomm and Lenovo solutions, there was no need for us to purchase, install, and maintain specialized camera equipment," comments Kevin D. Worth, Assistant Head of School for Operations at LJCDS. "Instead, we could leverage our previous investment in security hardware. In fact, by enhancing our existing cameras with AI, we have dramatically increased the value of every existing camera on campus as they give us fast, accurate threat detection capabilities around-the-clock. This is an invaluable resource that truly helps us to keep students, staff, and our campus safe 24/7."

"Schools must be safe places for discovery, creativity, and exploration. Lenovo and Kognition solutions help us to create an extremely secure environment while also maintaining a welcoming and open atmosphere on campus. Our students and staff feel protected, which helps them to focus on education."

Gary Krahn
Head of School, La Jolla Country Day School

Why Lenovo?

For LJCDS's AI-powered surveillance and threat-detection system to work effectively, it must process video and images in real time—demanding significant compute power. At the same time, the school had limited budget and space to build a large data center to support the solution.

"To succeed in our security enhancements, we needed hardware that was small, powerful, energy-efficient, and cost-effective," explains Worth. "Kognition recommended the Lenovo ThinkEdge SE450 platform and it ticked all these boxes. The Lenovo ThinkEdge solution gave us everything we needed to take student and staff protection to the next level with AI tools."

Partner perspective: Kognition

"As an early member of the Lenovo AI Innovators ecosystem, we received unparalleled access to technology, go-to-market resources and industry expertise that simply is not available from other tier-one technology vendors. Independent Software Vendors like Kognition work in real time to serve the dynamic requirements of both the commercial and enterprise customers. Lenovo's programs, tools, guidance, and people are simply head and shoulders above other vendors that we have engaged with in the AI space. For Kognition, Lenovo offers the best technology solutions combined with the most professional partnership approach available in the industry."

Michael Ferreri
Vice President Sales and Channels, Kognition

KOGNITION

How can schools keep kids safe on campus?

Working with Kognition and Lenovo, LJCDS transformed its security cameras into smart threat-detection sensors—helping to identify and act on dangers.

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