

DELLTechnologies

Advancing the frontiers of enterprise security

Highly accurate face recognition is transforming security into a business asset.

paravision

 **NVIDIA**

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Beyond protection, biometric identity helps organizations get better at what they do

Traditional approaches to commercial and government security tend to be single-minded in their pursuit of protection, but they sometimes treat efficiency and usability as secondary considerations.

In a transformative collaboration, Paravision delivers standardized biometric security that is powerful, scalable and cost-effective when deployed on a Dell Precision Data Science Workstation (Dell DSW) platform. The proven accuracy and extremely fast performance of Paravision's artificial intelligence (AI) solution on Dell Technologies hardware allow organizations to make security stronger and their processes more efficient.

By deploying innovative technology from two respected U.S.-based industry leaders, both business and government entities can make more effective use of resources and deliver better experiences to employees and the public. They also can rely on Paravision's ethically developed and conscientiously sold AI to ensure appropriate application and consistent performance in enterprise and government use cases alike.



Conventional security at its limits

Many organizations are challenged with deploying effective security solutions without imposing constraints on users and processes.

Burgeoning physical and digital security risks and threats have prompted commercial and public-sector organizations to strengthen the protection of their facilities and assets. However, they often find it difficult to create the right balance of security, usability and cost-effectiveness.

For example, many card- or token-based security and access control systems are vulnerable because people can simply share cards and tokens. Historically, it has been expensive to acquire, implement and administer biometric systems to replace physical tokens.

When employees expect smooth, productive experiences and companies strive to operate as efficiently as possible, security can seem like a throwback. It's hard to justify spending when security measures slow everyday routines, such as access to a production facility. Some organizations may let security languish instead of considering it with fresh eyes.

Partnership for security transformation

It takes inspired innovators to break new ground for strong security that makes business sense and is also highly usable.

Facial recognition technology offers the potential of transforming security based on people's unique identifying features. Paravision, a U.S. provider of computer vision solutions, has emerged as a global leader in this field. The Face Recognition Vendor Test (FRVT) project, conducted by the National Institute of Standards and Technology (NIST), is the industry's most rigorous and comprehensive assessment, and it has repeatedly confirmed the accuracy of Paravision's offerings.¹

Government and commercial entities already use Paravision's AI platform to enhance the protection of their assets and resources. They benefit from next-generation authentication and identity verification solutions facilitated by Paravision's technology to bring greater efficiency and ease of use while also improving security.



“Until very recently, it was not possible to deliver powerful security with excellent usability. Paravision resolves this challenge by combining intuitive, frictionless user experiences with high throughput and outstanding accuracy and efficiency.”

Doug Aley
CEO, Paravision



The Paravision algorithm is more accurate than the world's best iris recognition in like-to-like, 1-to-many identification tests.¹





Paravision software can process 1080p video at more than 250 frames per second on a single Dell Precision 7920 tower Data Science Workstation.

To accelerate the pace of solution development, Paravision relies on strategic, collaborative partnerships like the one it maintains with Dell Technologies.

Clients looking to address their security challenges and improve their protection strategies want to do so immediately and with high confidence. Paravision's software, delivered on Dell DSW hardware, can provide what these organizations are looking for.

Both partners are well-known, U.S.-based industry leaders that enjoy high levels of trust from government and business clients. In terms of goals and business cultures, they are highly complementary. They both aim to deliver solutions with the best possible performance, throughput, reliability and performance-to-cost ratio. Collaborating teams in both organizations do their best to make it easy for clients to engage with them.



“By partnering with Dell Technologies, we are enabling customers to quickly and confidently deploy ultra-high-performance, on-premises solutions powered by Paravision AI and computer vision.”

Joey Pritikin

Chief Product Officer, Paravision

Enabling technology for Paravision AI

On-premises deployments can be fast and predictable with Dell Precision tower workstations.

For the majority of Paravision's clients, being able to deploy facial recognition technology on-premises is a critical requirement, given the sensitivity of their data. They also want to shorten deployments and get to production use quickly.

Paravision finds that Dell Precision 7920 desktop tower Data Science Workstations provide a perfect hardware foundation to run its AI algorithms. The Precision 7920 DSW towers are engineered to provide extremely fast performance and extensive scalability specifically for AI and virtual reality (VR) applications. They also offer industry-leading maximum uptime and, with the Paravision inference engine loaded as a Docker image, enable rapid on-premises deployments.





“The NVIDIA infrastructure makes it easy for us to develop and deploy high-performance machine learning models without having to perform repeated development for each target GPU. That’s a huge advantage for Paravision and our customers.”

Charles E. Rice

Chief Technology Officer,
Paravision

NVIDIA GPUs make it possible to process high volumes of video data for immediate analysis.

Paravision’s facial recognition technology requires the simultaneous processing of multiple video streams. To make this possible at the level of performance and throughput that Paravision aims to deliver, the Precision 7920 tower DSWs come with NVIDIA Quadro® RTX 8000 graphics processing units (GPUs).

As an NVIDIA Inception partner, Paravision takes full advantage of NVIDIA solution development. Paravision teams rely on NVIDIA TensorRT™ software to enable deep learning inference applications with superior performance, including support for NVIDIA Ampere, the new GPU microarchitecture.

Paravision, Dell Technologies and NVIDIA have come together to deliver the best possible client impact from their innovation in AI and machine learning, high-end graphics and data processing, and high-performance computing hardware.

Innovating tomorrow's security

Paravision is enabling accurate, touchless and frictionless AI-powered security for a broad range of challenging use cases and environments.

As proven in one recently deployed scenario for fast, dependable access control, workers in vehicles can keep moving at 10 miles per hour as cameras capture and submit face images to Paravision's biometric engine. Even while in motion and through glass panes, verification is immediate and accurate. Instead of queuing up to enter the facility and start their shifts, people can access their workplaces without taking that extra step.

This access control application can transfer to many situations that require identity verification for large numbers of people. In addition to enterprises with large workforces, security at border controls, conferences, or air, marine and rail terminals can stop using easily compromised physical tokens and take advantage of the Paravision inference technology.





Paravision is one of the top-10 globally ranked companies for facial recognition accuracy with medical-grade masks — without any adjustments to its standard algorithm.²

Paravision takes advantage of every opportunity to evolve and refine its development of AI-powered biometric technology.

Collaborating closely with clients, Paravision strives to improve its already outstanding performance across a range of demographics and extremely challenging conditions. The organization's technology team is developing and standardizing new dimensions for facial recognition that can benefit the entire security industry. Skin tone, gender, age, distance, angles, occlusions, lighting, image quality and a variety of environmental conditions are all considered in development and benchmarking. The standard Paravision algorithm delivers consistent performance and accuracy when faces are partially occluded, masked, or captured at an angle, or when organizations have to rely on nighttime or even near-infrared detection.

In addition, Paravision is refining presentation attack detection (for example, liveness and anti-spoofing) to ensure the authenticity of biometric samples.



“In our highly diverse world, it is our mission to deliver transformative technology that enables our clients to safeguard their rapidly changing physical and digital spaces.”

Dave Singer

Vice President and General Manager,
Public Sector, Paravision



Paravision's ethical, equitable and accurate AI

Paravision has adopted standards for AI innovation for the common good and works to ensure pervasive ethical AI practices in the community.

Paravision follows two ethical principles for AI:

- AI has to be ethically trained. Paravision uses diverse data in sufficient quantities to create fair AI models that treat demographic segments and individuals from any background equitably. It acquires data from around the world to ensure fair representation across gender, age, ethnicity and other characteristics.
- AI must be conscientiously sold. Paravision vets every potential client and business partner for ethical business practices, and it only sells AI models that verifiably meet NIST or comparable standards. It follows guidance from human rights organizations and the U.S. Department of State in determining whether to withhold its business from certain countries.

Paravision is aware of the objections to inequitable, unreliable facial recognition and is addressing them.

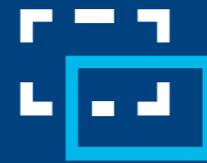
Paravision is spearheading AI-powered biometrics and security solutions that are transparent, inclusive and ethically deployed. The Paravision inference engine performs with predictable accuracy, easing concerns about unreliable data resulting in flawed or biased security and safety practices. Benchmark testing confirms that the Paravision technology is highly reliable in identifying people across race, gender and age — in contrast to the shortcomings of less advanced AI offerings.

When some communities have already banned facial recognition technology or are considering taking that route, it takes the right outreach to make the case for accurate, equitable AI applications. Paravision engages with communities and clients to help them address the public's concerns and distinguish between uses of the technology while delivering trusted AI.



“We are guiding our industry toward responsible, ethically sound practices for adopting AI-enabled face recognition.”

Doug Aley
CEO, Paravision



Paravision reports it consistently benchmarks error rates of less than 1 in 100,000 for facial recognition accuracy across race, gender and age.





Establishing the ROI of security

Expert team members from Paravision can assist you in defining the possible returns and savings of face recognition-based security.

Organizations sometimes find it difficult to project or assess the ROI of newer technology they may be implementing for the first time. You may want to start by asking questions like the following:

- **Across the entire workforce**, how much productive time would you gain if employees, contractors and visitors could navigate access controls and security protocols in a fraction of the time they do now?
- **How many security analysts**, data scientists and guards would you have to add to your team to ensure full-coverage security at all times?
- **What are the potential damages and risks** to the public or officials that could result from an undetected intrusion into a facility?
- **What valuable data, documents, insight** into proprietary processes and production equipment, or even raw materials could an unauthorized intruder steal from an industrial site?

Assessing the potential impact of data losses and security breaches will help you gauge the value of investing in AI and biometrics.

Projecting the potential ROI of an investment in biometric security can also help you identify risks in your operation. Some other questions to ask:

- How much might your intellectual property be worth to a competitor or cybercriminal, and what could they accomplish with it?
- What would be the financial and reputational costs of incurring a security breach and remedying it?
- Would a security breach put sensitive customer data at risk? What would be the cost and effort involved in reaching out and working with customers to address this?

“

“We expect the next generation of AI-powered security solutions to have a sound ROI based on such factors as stronger security, better efficiency, superior employee experiences and cost savings.”

Dave Singer

Vice President and General Manager,
Public Sector, Paravision

Next steps

Prepare to benefit from accurate, innovative, AI-powered biometric identity solutions.

Paravision is ready to help. To have an exploratory conversation, arrange for a demo or see where facial recognition security is going:

- Visit or contact [Paravision at www.paravision.ai](http://www.paravision.ai).
- Review [Paravision white papers](#).
- Understand [Paravision's AI principles](#).
- Catch up on [Paravision news](#).

For Dell AI and DSW information:

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