Innovation in Action: IDEMIA Public Security's Edge in Biometrics and AI

Marwan Elnakat on how Idemia Public Security is driving innovation in biometrics and AI

ACCESS CONTROL JUSTICE & PUBLIC SAFETY TRAVEL

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Marwan Elnakat, Technology and Marketing Strategy VP, shares how IDEMIA Public Security (IPS) is pushing the boundaries of biometric and AI technologies. From contactless fingerprint acquisition to generative AI, IPS is shaping the future of secure, efficient, and equitable solutions worldwide.

How does IPS lead in biometrics and AI R&D?

IPS is a global leader in biometric innovation, combining cutting-edge accuracy, algorithmic performance, and fairness. Our proprietary technology ensures high efficiency while minimizing the biases that often challenge biometric systems. Our unique approach involves overseeing the entire workflow, from sensor technology to user interfaces, allowing us to optimize speed, reliability, and user experience. This comprehensive oversight enables the development of seamless, high-performance solutions tailored to various applications.

We have pioneered large-scale contactless fingerprint acquisition, initially for access control and now extended to border control and law enforcement. Our AI-powered innovations also enhance luggage retrieval and vehicle identification.

Notably, IPS's facial recognition algorithm achieved top-ranking accuracy in the latest National Institute of Standards and Technology Face Recognition Technology Evaluation (FRTE), highlighting our commitment to excellence in biometric solutions.

What role does AI play in IPS's biometric technology?

AI is integral to our biometric solutions, automating forensic workflows, reducing errors, and accelerating processing times. It enhances fingerprint segmentation, case management, and automated forensic tasks, ensuring consistency and accuracy.

Our AI-powered compact fingerprint acquisition system delivers superior performance, enabling real-time identification in critical situations. AI also improves video analytics and rapid identification capabilities, increasing reliability even in complex environments like crime scenes and border checkpoints.

From crime scene analysis to border control optimization, AI serves as the backbone of our biometric innovation.

How does IPS's technology strategy support public security goals?

Our strategy focuses on delivering technology that directly supports critical operations. Whether in forensic investigations, border control, or national security, our solutions enable agencies to act with speed, precision, and confidence. We emphasize that our innovations translate into tangible results for public security agencies.

What sets IPS's technology apart in law enforcement and border security?

Our technology is designed for real-world impact, and we have been creating value and making a difference in the field for more than 35 years. From accelerating forensic investigations to automating border control processes, we provide security professionals with high-performance, AI-driven solutions that enhance decision making and streamline operations.
By combining technical excellence with a customer-first mindset, we ensure that every innovation serves a clear purpose—helping agencies tackle their most pressing challenges with confidence and efficiency. Our solutions deliver actionable insights that strengthen security operations, protect communities, and optimize critical processes.

How is IPS harnessing the potential of generative AI?

Generative AI enhances flexibility, intuitiveness, and efficiency across our systems. For example, it automates system configuration and report generation, enabling us to deliver customized reports in seconds—saving time and providing more value to our customers.
We are also working on developing natural text-based user interfaces that streamline interactions with complex systems. By integrating generative AI with our biometric models, like facial and fingerprint recognition, we are creating more adaptable, future-ready solutions.
In addition, thanks to our close collaboration with leading academic organizations worldwide, most of the underlying scientific advances underpinning generative AI have already been integrated into our fundamental technologies, such as transformers, diffusion models, multi-stage learning, fine-tuning, distillation, mixture of experts, etc., thereby enhancing the performance of our solutions where it is most needed.

How are biometric and AI technologies transforming public security in travel and transportation?

Biometrics and AI are revolutionizing passenger verification and security. Our solutions streamline identity checks at border crossings, with facial recognition and contactless fingerprint scanning enabling faster, more secure travel without compromising safety.
AI-powered analytics also monitor passenger behavior in real time, identifying potential threats and enhancing situational awareness throughout the traveler journey.

How is AI assisting law enforcement operations?

Law enforcement agencies use biometric and AI technologies to improve crime investigation and evidence analysis. IPS provides multibiometric enrollment stations that accelerate booking procedures by swiftly and accurately capturing biometric and alphanumeric data. This facilitates rapid background checks and suspect identification, leading to faster case resolutions.
AI-powered tools also analyze large datasets, uncovering patterns that may support predictive policing and help optimize resource allocation.

How do IPS enrollment solutions strengthen identity verification?

Our enrollment solutions provide government agencies with secure credential issuance and robust identity verification. By integrating advanced biometrics, such as fingerprint and facial recognition, these systems reduce fraud risks, increase public safety, and provide seamless access control across various security applications.
IPS is leading the way in using biometric and AI technologies to make public security smarter, faster, and more secure. We continuously push the boundaries to create safer, more efficient systems for the future.