

Unlocking the power of AI: empowering solutions for the future

TRAVEL

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As artificial intelligence and machine learning continue to make headlines, just about everyone knows something about these formerly-niche topics. While these technologies have been getting buzzier in recent months, IDEMIA has been building up its AI expertise for decades. To learn more about how the Group uses the power of AI to provide services to companies and end-users alike, we sat down with **Geraldine Genest, VP of Data Science at IDEMIA**, to talk about some of IDEMIA's use cases for AI.

1. Identifying lost luggage

Airlines lose roughly 1.8 million bags globally every year¹. When we consider that most luggage tends to look similar, it is very difficult to identify one dark colored suitcase in a sea of dark colored suitcases. In fact, airports have hangars full of lost luggage. But if you look close enough, each piece of luggage is unique — a scratch here, a tear there.



With this in mind, IDEMIA tweaked and adapted years of biometric expertise and techniques to create a solution for this all too familiar problem.

Geraldine Genest, VP of Data Science at IDEMIA

Once a piece of luggage is checked in, IDEMIA's **Augmented Luggage Identification eXperience (ALIX)** system captures high-quality images of the bag from multiple angles, noting every minute detail and creating and storing an augmented digital tag for each bag. Along the journey, if a bag loses its physical tag or gets lost, airline companies can use the power of AI to sift through thousands of **digital tags to quickly identify the lost luggage** — saving everyone a lot of time and stress!

2. Authenticating ID documents

Today, there are as many as 4,000 different ID documents, hailing from countries all around the world. Not even the most seasoned border control agent will encounter every existing document in the span of their career, but they will need to be prepared to authenticate any document that crosses their gate. Authenticating an ID document requires them to first **identify the document** type — a passport issued from the Netherlands, for example. They then need to **determine if the ID document is authentic** and finally if it belongs to the **document holder**.

Decades ago, a worldwide standardized system was created to encode all critical identity information in two lines of text at the bottom of the identity page of a passport booklet. This code helped border agents with the first authentication step. Next, they needed to be familiar with **identifying images, patterns and watermarks** used on various official

documents in order to distinguish a valid government-issued ID document from a forged or counterfeit document.

And lastly, border agents are tasked with determining if the person pictured in the document is the same person standing in front of them. Not only is this an incredible amount of information for any person to commit to memory, but it takes a **great deal of time to manually verify each authentication feature** and opens the door to human error.

Here's where the power of AI comes into the picture. Algorithms are used to help the operator authenticate the type of document, flag counterfeit documents and compare the biometric data of the live person at the gate with the data contained in their identity document. All with the highest level of accuracy and speed.

Geraldine Genest, VP of Data Science at IDEMIA

3. Maximizing factory efficiency with preventive maintenance

Some of the busiest factories today are manned by robots – and while they are extremely efficient and precise, they can't warn their boss when they start to feel a bit run down. To address this issue, IDEMIA's R&D teams partnered with AWS to co-develop a preventive maintenance solution that uses **advanced automation, machine learning, AI and robotics** to remotely monitor production line robots in card factories.

Collecting data from each and every robot on the factory floor and using the power of AI to analyze data pools makes it possible to conduct preventive maintenance and ensure that robots are always on and running properly. With this technology in place, if a robot begins to vibrate irregularly, maintenance teams are immediately notified and can check on that robot and conduct any preventive maintenance to **limit, or even eliminate, downtime**.

Given that these factories are expected to run 24 hours a day, seven days a week, the ability to anticipate possible malfunctions is crucial to product quality as well as overall factory efficiency.

Geraldine Genest, VP of Data Science at IDEMIA

After a successful pilot in Asia, IDEMIA will deploy the solution across all six of its card manufacturing sites in 2023.

4. Monitoring anomalies thanks to rejection rate

Every biometric use case, whether it's a passport reader at the airport, a bank's customer onboarding system, or the entrance of a secured office building, utilizes advanced technology to ensure accurate identification and enhanced security measures. IDEMIA harnesses the power of AI to analyze large volumes of data received at these checkpoints, enabling **prompt detection of any irregular activity** and timely alerts if necessary.

Rejection can occur for entirely innocuous reasons – a damaged badge, a smudge on an ID card or a user who incorrectly places their passport on the reader. However, **if the rejection rate jumps, it can signal a larger problem**. IDEMIA teams run rejection rate checks and send alerts so its clients can react quickly and deep dive into the cause of the problem.

At IDEMIA, we believe that AI is our ally – a complement to human intervention that enables us to work more efficiently, with increased precision. These are just four examples of how IDEMIA is putting AI to work to simplify and secure everyday tasks. As use cases continue to

expand and evolve, so too will the accuracy and speed of algorithms — bringing everyone one step closer to an ever more streamlined world.

Geraldine Genest, VP of Data Science at IDEMIA

¹ <https://www.theguardian.com/world/2023/may/18/mishandled-baggage-rate-almost-doubled-globally-in-2022-as-airlines-scrambled-after-covid>
