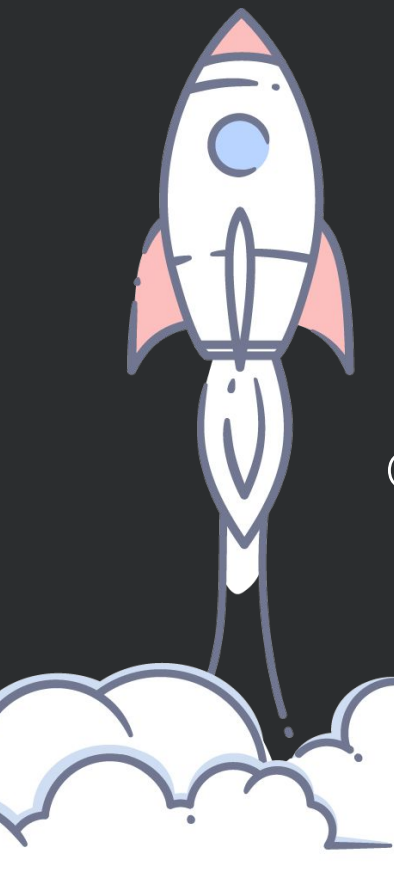# UNX Digital ||||

Leading Digital Experiences

People, Data & Technology

Digital & Cognitive Transformation

UNX Digital empowers **innovation** and transforms ideas into **cutting-edge solutions**, **pushing the boundaries** delivering products that shape our **future**.

30+ Years

Creating solutions.

7+ Countries

Delivering solutions around the world.

200+ Collaborators

Thinking from innovation

500+ Projects

Working close to the needs of our customers.

The Strategy

SERVICES OVER PLATFORMS

- PERSONALIZATION
- RAPID ACCESS
- TREND & HIGH TECH
- AGILE & INNOVATIVE

Microsoft Azure Google Cloud aws partner network NVIDIA. kubernetes seeed studio

The Capabilities

Internet of Things
IOT
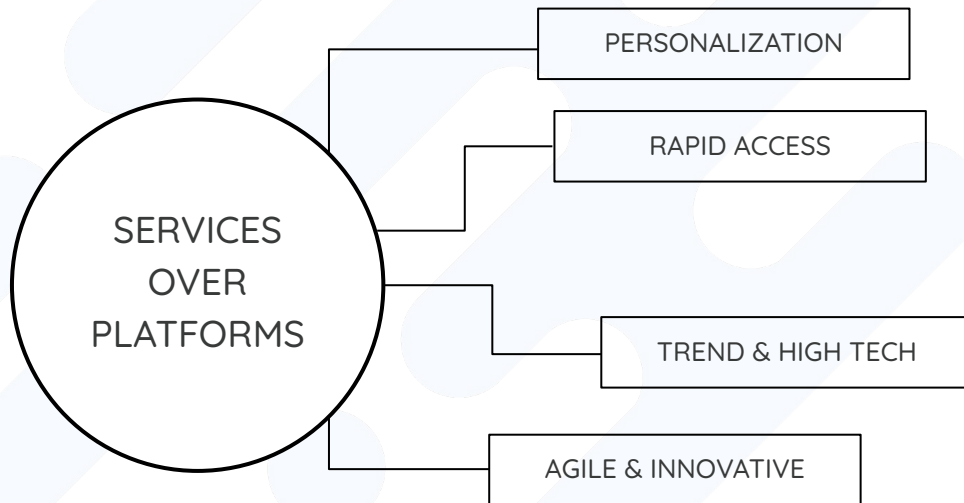
New products involving activities, sensors data and processes

Big Data
BD

Ours teams work hard to create meaningful, actionable and timely business insights

Artificial Intelligence
AI

Machine Learning, Patterns Recognitions, Natural Language Processing and much more
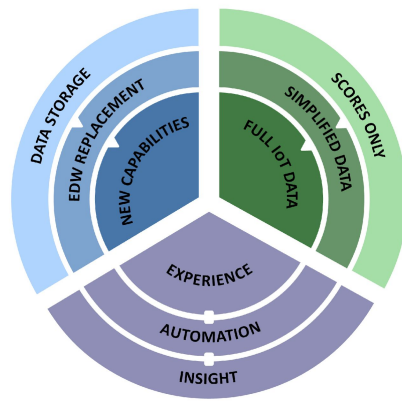
All three of these emerging technologies are tightly intertwined

DATA STORAGE
EDW REPLACEMENT
NEW CAPABILITIES
SCORES ONLY
SIMPLIFIED DATA
FULL IOT DATA
EXPERIENCE
AUTOMATION
INSIGHT

What Is the Value of Computer Vision?

Computer vision systems are trained to inspect products, watch infrastructure, or a production asset to analyze thousands of products or processes in real-time, noticing defects or issues. Due to its speed, objectivity, continuity, accuracy, and scalability, it can quickly surpass human capabilities.

The latest deep learning models achieve above human-level accuracy and performance in real-world image recognition tasks such as facial recognition, object detection, and image classification.
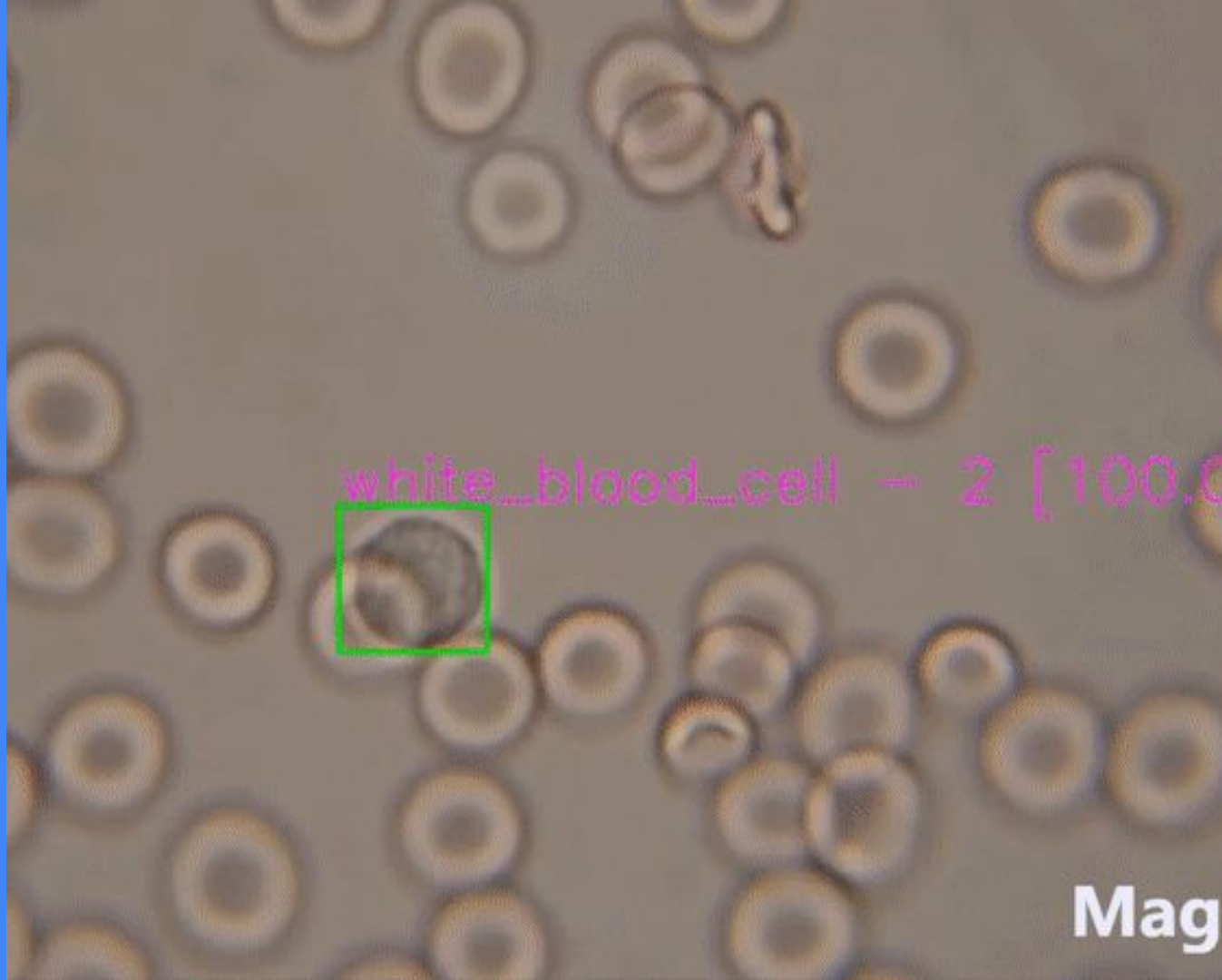
Our Solution

Our Services

Agile Project Development

Quickly bring great ideas to life with our team of experts to provide end-to-end full solution services. Our engineers build, optimize and integrate applications with your existing tech.

- Full solution planning and building
- Expert solution configuration review
- Custom add-on integrations

Agile Delivery + SAAS

We provide to you a team of experts developers, who'll provide to you building and production experience in computer vision, video analysis, machine learning, cloud and edge.

- Hands-on solution building support
- Feature planning and testing
- Iterative solution planning
- Appropriate monthly fee

Discover your idea success

Have a better picture of your project and idea

When you convert your idea into words in our POC Template, you're reviewing your entire concept and finding issues that you wouldn't uncover otherwise. This process also helps you slow down your thoughts and think more clearly about what needs to be done.

Quick Feedback

This is ultimately the most valuable benefit out of a POC. The feedback you will gather will help fine-tune your idea. It will also help you understand if you found a gem.
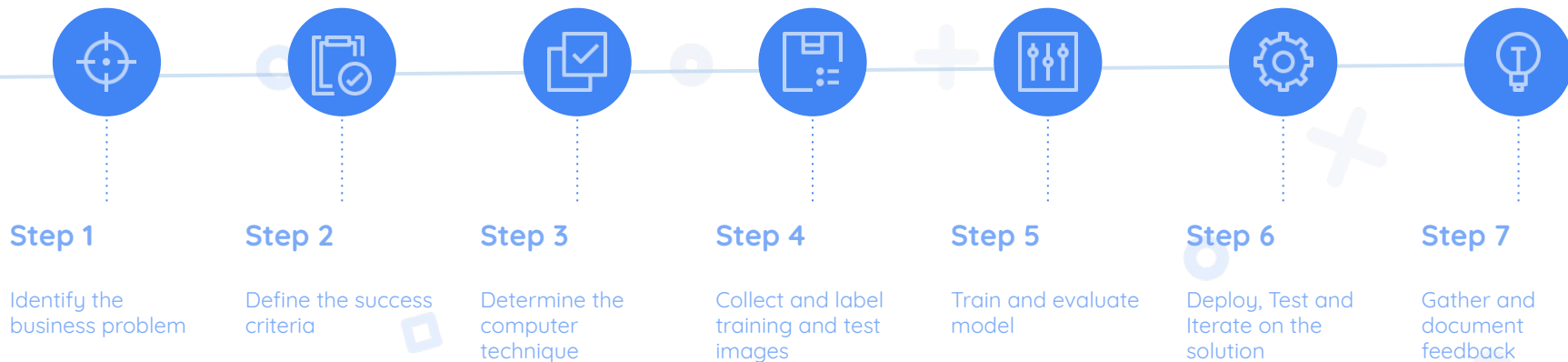
Save your money

A POC helps you save money in two ways:

- It lets you verify if your idea is feasible before putting any significant amount of money into building an MVP.
- By setting the ground for the subsequent phases. It helps clarify the Scope so that you don't spend money on the features and functionalities that aren't required.

Our Discovery Roadmap

Our seven **key steps** to making the computer vision Proof of Concept a **success**

Step 1

Identify the business problem

Step 2

Define the success criteria

Step 3

Determine the computer technique

Step 4

Collect and label training and test images

Step 5

Train and evaluate model

Step 6

Deploy, Test and Iterate on the solution

Step 7

Gather and document feedback

Our Discovery Roadmap

1. Identify the business problem. To be successful, a computer vision project should have a clear business goal and benefit. We are able to describe the goal and benefit in one to two sentences, in order to set a clear crystal mindset for everyone.

2. Define the success criteria. The goal here is to translate the business outcome into simple success criteria that can be used to measure the effectiveness of the solution.

3. Determine the computer technique. We identify the right techniques up front will clarify the data requirements and enable our team to focus during the execution phase.

4. Collect and label training and test images. If the scenario is not focuses on one of our more than +30 pre-trained models ready to use, we will need to collect and label data to train a new model.

5. Train and evaluate model. Once we have a good set of images labeled we are ready to shift to model training. In transfer learning, a pre-trained model is repurposed for a new scenario.

6. Deploy, Test and Iterate on the solution. With the model deployed we are ready to interact with the new model in a real-world environment. At this point we start to solicit feedback. Developing a machine learning model is an iterative process of trial and error. If the model is not performing well, there are many steps we can take to improve performance.

7. Gather and document feedback. The gathered feedback lets us verify the usability and feasibility of the solution. It also informs of any needed improvements to the proposed product and gives significant insight for other relevant actions moving forward.

General Deliverables

- **Functional concept test.** This implies both the demo code and documentation of everything that is done during the POC.
- **Feasibility Report.** This is represented by the set of functional technical reports that validate the degree of technical/economic feasibility of the idea proposed and executed in the POC.
- **Discovery.** It refers to the set of epics and possible work tickets that make up the initial roadmap to take the POC to its next stage, that is, to a Minimum Viable Product.
- **Investment Roadmap.** It refers to the set of documents that allow a clear vision of the times and resources necessary to be able to take the POC to its next stage.
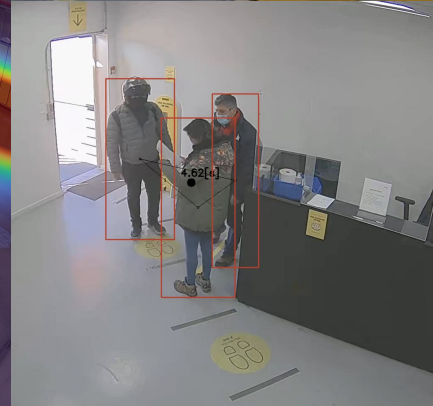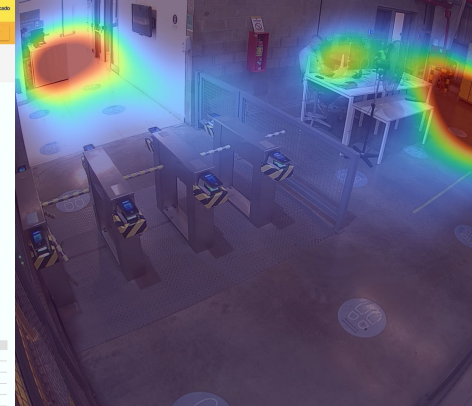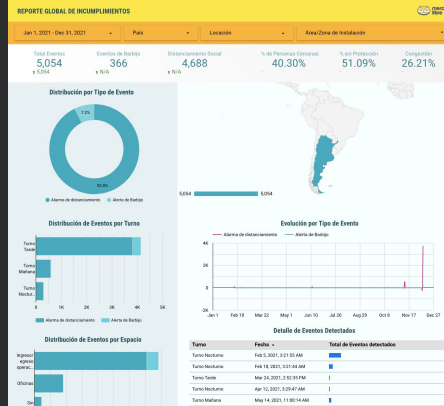
Our Work

Security & Safety

Challenge

Based on the branch of Artificial Intelligence, Computer Vision, and the video processing of security cameras, this project is intended to given the need to guarantee and supervise adherence to the corresponding regulations. Mercado Libre seeks to have a solution that allows the registration of breaches of security measures promoted by said protocol on all sites in Argentina, Mexico, Brazil, Colombia and Chile

Solution

Our solution? It is based on making available metrics that record breaches and other scenarios in the form of reports using the power of BI and Big Data. Along with the reports, evidence will be captured given the processing of more than 5,000 security cameras, considering different use cases adapted to the needs of each country, such as social distancing, the use of a mask, the security equipment, the work cells, etc. The goal is to provide the MELI Health and Safety Team with the resources to monitor protocol compliance and promote a safe workplace.

Transportation & Logistics

Challenge

As with any public transport service, the level of evasion in the payment of the passage is a problem that concerns different departments within the structure. In the search for an improvement, it is intended to improve the quality of the data that is used as a tool when making decisions.

Solution

Using the current camera infrastructure, Artificial Intelligence models were incorporated that identify bodily evasion behaviors. These models are able to count passengers in their different flows and addresses, data that intersect with traditional collection services and allow us to infer percentages of evasion in real time. This also allows you to identify passenger flows and make better decisions about frequencies.

SE BD AI IOT

Transportation & Logistics

Challenge

Detect the frequency of arrivals and departures of formations in different stations, using video ingestion and computer vision.

Solution

Using the current camera infrastructure, Artificial Intelligence models were incorporated to identify plates.. Applying Computer Vision to video ingest in order to detect markers that make patent plates, in order to collect and process the data obtained.

Transportation & Logistics

Challenge

The growth of the use of public transport in large cities creates a permanent challenge of better understanding the needs of its passengers. With this premise it seeks to offer a better service based on the modification of the behavior of both its processes and passengers. In this sense, understanding how passenger flows move between different points so that you can modify both the frequency and the crossing is a priority.

Solution

Without entering large hardware investments and using the current surveillance camera infrastructure, Artificial Intelligence models were incorporated that are capable of generating a real-time origin-destination array of passengers. This allowed you to validate processes and obtain real information so that you could execute the necessary process changes when it came to providing a better service. As an additional addition, the demographics of the passengers are known today and a differentiated service can be offered to each of them.
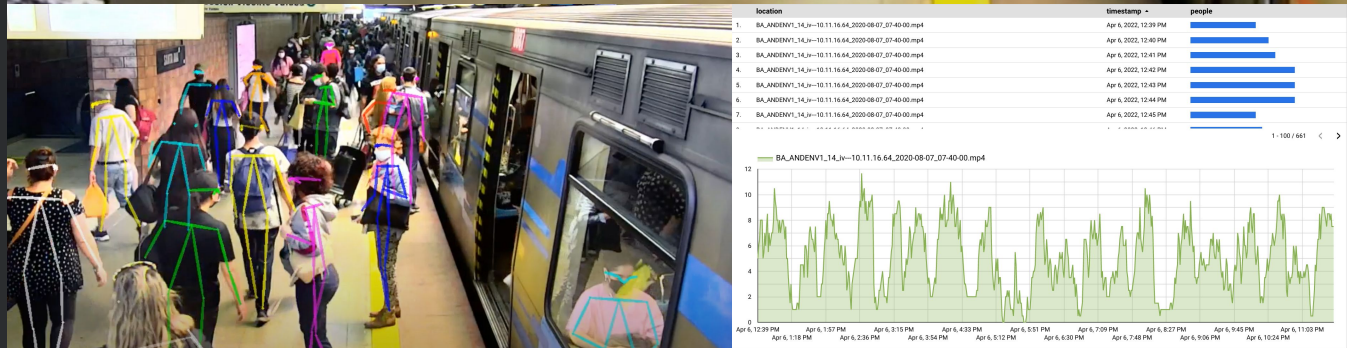
Manufacturing

Challenge

Detecting bad quality material in products manufacturing is an error prone & time consuming manual process and results in false positives (detecting a bad one as good one). If a faulty component/part is detected at the end of the production line there is loss in upstream labor, consumables, factory capacity as well as revenue. On the other hand, if an undetected bad part gets into the final product there will be customer impact as well as market reaction. This could potentially lead to unrepairable damage to the reputation of the organization.

Solution

We automated defect detection on hardware products using deep learning. During the manufacturing processes there could be damages such scratches / cracks which make the products unusable for the next processes in the production line. Our deep learning application detected defect such as a crack / scratch in milliseconds with human level accuracy and better as well as interpreted the defect area in the image with heat maps.

BD AI IOT SE
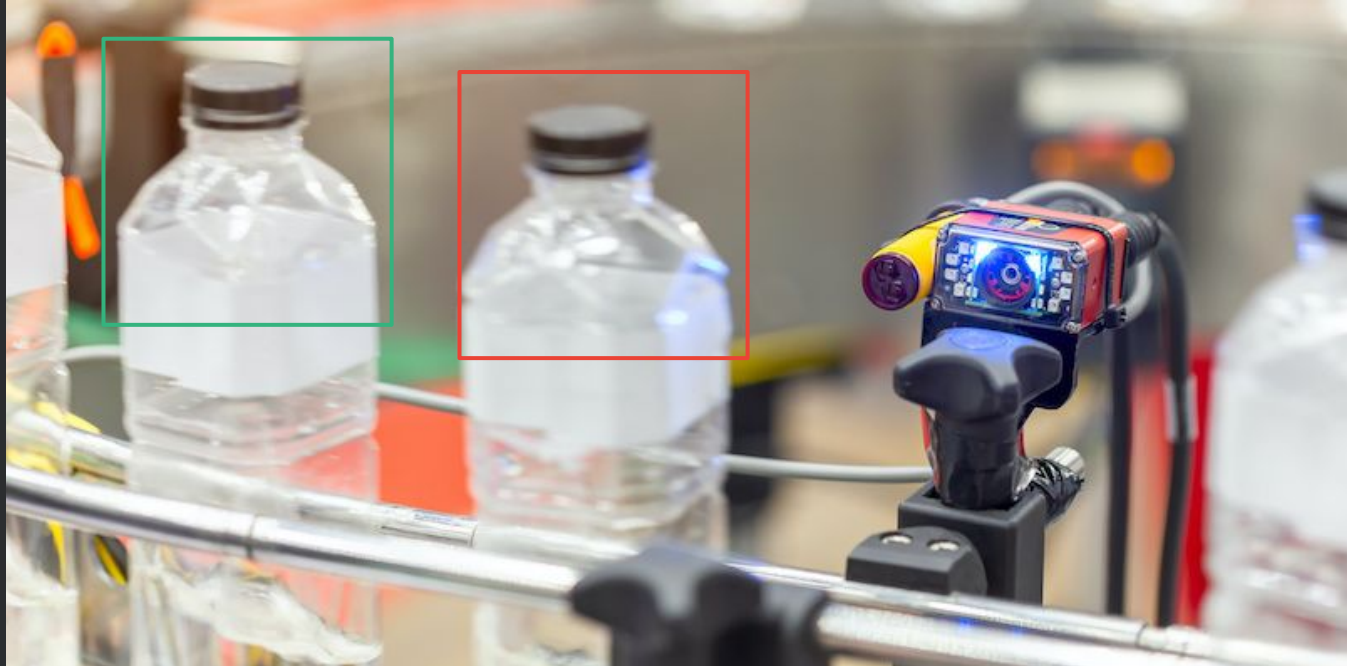
# Customer Experience

Challenge

Get to know the visitors of certain points of interest better in order to understand their habits and improve the sales conversion rate, using video ingestion and computer vision.

Solution

Apply Computer Vision to video ingest in order to detect and analyze visitors and their habits, in order to collect and process the data obtained through the use of Machine and Deep Learning.
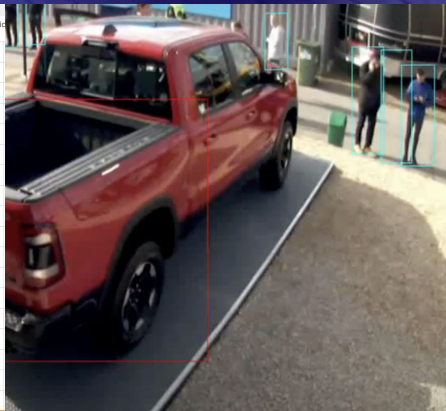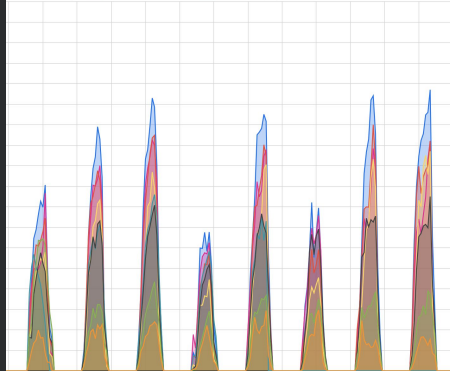
Retail

Challenge

The marketing department was challenged to understand the Customer Behavior Analysis in order to create better and custom offerts increasing the rate conversion.

Solution

The solution was based on the current video infrastructure, capturing and tracking customer activity, optimizing the customer experience, saving operating costs and increasing sales with AI vision Analytics. Getting and processing data related to several points of interest

* Automatic and contactless people counting without the need for physical tracking devices, costly installation, and maintenance.

* Common surveillance cameras can be used for people counting, making the method comparably easy to implement, even in large-scale use cases.

* Increased safety of customers and workforce by ensuring compliance with government regulations, for example, related to COVID-19 measures.

* Actionable insights to estimate the number of people in retail stores in real-time, discover peak hours, bottlenecks and compare key metrics across different locations.

* Leverage insights by sending data to third-party systems and visualizing it in dashboards.
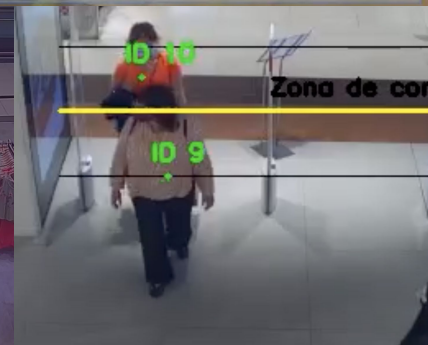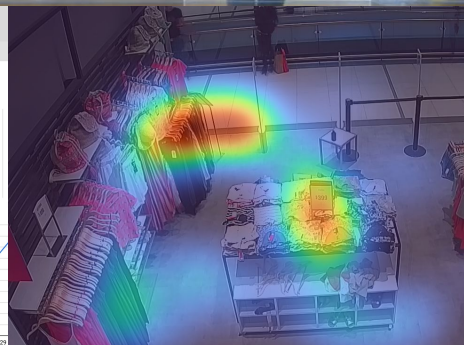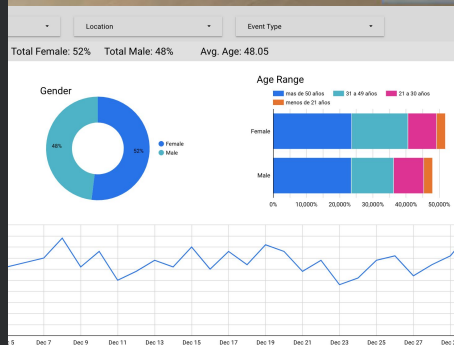
Government & Smart City

Challenge

Under the premise of effective use of resources, management had the need to understand how to prioritize the work of repairing the streets within the territory.

Solution

The challenge was a big thing! Using Artificial Intelligence models mounted on a mobile solution it was possible to detect the different types of incidents that affect the state of the streets. With this it was possible to map the incidents and their severity, making available to management a powerful tool to evaluate the priority of the tasks as well as to be able to better understand the functioning of the city.

SE   BD   AI   IOT   UX

Cognitive
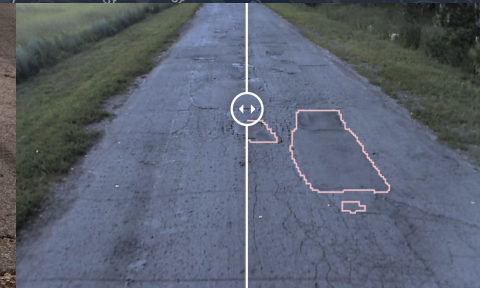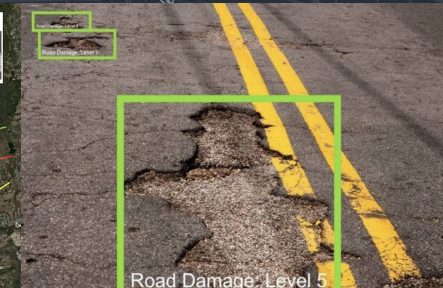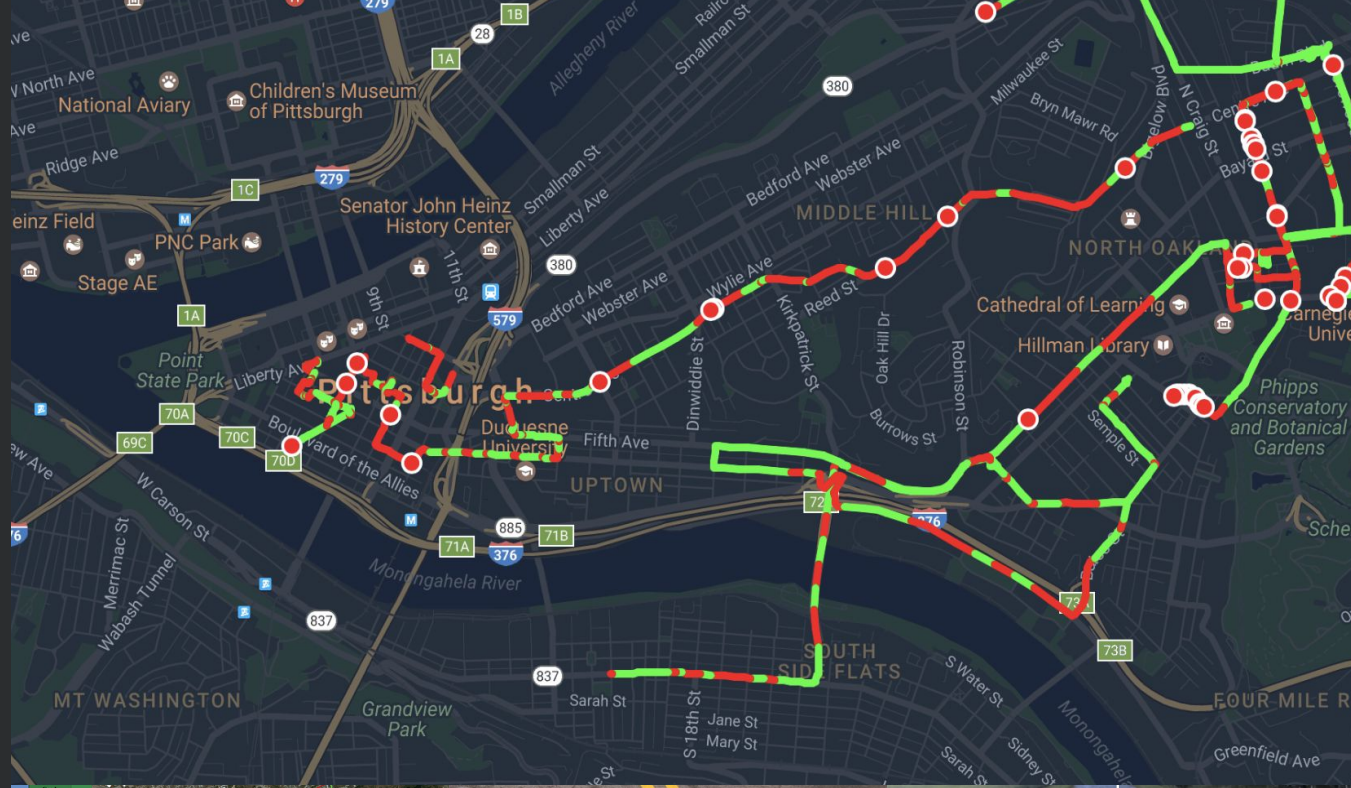
Inventory Management

Challenge

Based on Computer Vision this project is intended to Improve the efficiency of the people who do inventory control, freeing their hands and providing greater and better quality of information. Thus reducing times and control points, increasing efficiency.

Solution

Taking advantage of wearable cameras & advanced computer vision, we facilitate scanning of inventory in any given facility. This provides accurate location information for associates and integrated internal systems & databases.

Thanks!

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