

ARTIFICIAL INTELLIGENCE AND BIG DATA

Artificial vision for optimisation of industrial processes

At GMV we are working to improve the processes, services and products of our customers, developing technologies that increase the efficiency of their processes and allow them to deliver the best results to the end user.

The uSpot Artificial Vision solution allows us to carry out automated inspection, classification and maintenance tasks in facilities so that operations run smoothly and produce flawless end products.

- **Scalable modular system**, which allows the introduction of as many HW units as are necessary.
- It performs local **image processing** and only sends the necessary results.
- Flexibility to **adapt to the specific needs** of each customer and project.
- It includes the **gathering of feedback** by operators in order to inform and improve over time.

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MAIN FEATURES

ARCHITECTURE

- **Scalable:** The possibility to use on other customer lines and cloud compatible.
- **Flexible:** The capacity to adapt to various industrial processes.
- **Modular:** It allows the enhancement of an array of functions.

DATA ACQUISITION

- **Real-time** image processing.
- **Neural networks** with pre-trained architecture which allow adaptation to all cases of usage
- In addition to the image, it includes **context information** (line velocity, ambient temperature, time since last defect, etc.) in order to increase the precision and stability of the process.

EXTENDABILITY

- The use of leading open-source technologies in image and data handling for optimum performance.
- It allows the project to evolve in the direction set by the customer without technological restraints.

USES

VISUAL INSPECTION

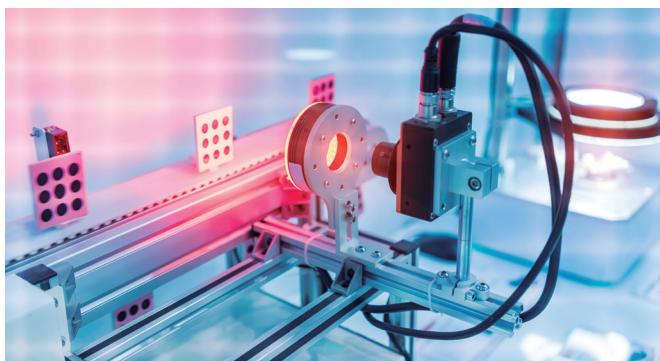
It analyses products on the production line in a dynamic manner in order to perform quality control and identify defective components with greater precision.

CLASSIFICATION

It allows the performance of all manner of classification tasks throughout the entire manufacturing process.

MAINTENANCE

It performs an automatic analysis of the status of mechanisms and systems of any nature used in the production process (cranes, tracks, belts, etc.) in order to detect possible faults, or even to anticipate them in a predictive manner.



TECHNOLOGICAL PROPOSAL



Python



TensorFlow



OpenCV

Customisation: Specialised technological software in accordance with the customer's requirements.

Precision: It prevents errors which can go undetected by the human eye, thus achieving an increase in process or product quality.

Productivity: It processes and manages a high volume of information in a short period of time (environmental data, neural networks, etc.).

Occupational safety: Minimum intervention by personnel in order to ensure workers' safety.