AUTOMOTIVE
REV UP GROWTH IN YOUR INDUSTRY!

VIDEO RECOGNITION IN THE FIELD
INTRODUCTION

The automobile industry is currently undergoing a major transformation in order to best meet the growing demands for new means of mobility, the adoption of new technologies and compliance with evolving environmental legislation. Thus, to design and build the cars of tomorrow, automakers and equipment manufacturers need innovative technologies and new services that will ensure safety, quality and performance for their customers.

The automobile industry, which in 2018 was valued at nearly 250 billion dollars, is defined by highly automated mass production, high quality standards and strict cost control.

Major manufacturers must therefore attach real importance to establishing a relationship based on trust with the technology suppliers that they choose to collaborate with. It is these suppliers who support the high degree of automation in production processes, particularly through the use of visual recognition.

3 KEY FIGURES OF THE SECTOR

2030

the year in which manufacturers (who are able to follow the trend towards the self-driving car) will see their profits double

54 BILLION EUROS PER YEAR

are invested by European automobile companies in R&D

20-40%

of handling costs could be reduced with the automation of production lines (source: Roland Berger research firm)
INDUSTRIAL INSPECTION

CHALLENGE

With the increasing complexity of car manufacturing, the accuracy of the shape and quality of the assembled parts is becoming essential. Indeed, the slightest defect on the production line can lead to the rejection of a car at the end of the line. It is therefore important to manufacture and assemble the parts according to a standardized design. It is also essential to be able to count on the reliability of the machines that make up the assembly line: the slightest failure leads to production paralysis, waste of time and therefore, significant costs (up to several thousand dollars per minute).

As quality requirements increase, so does the need for automated inspection processes. This applies both to the verification of tools before and after machining and to their manufacture. Video recognition provides an effective response to this need.

OBJECTIVES

- Avoid production shutdowns due to breakdowns, maintenance operations or parts replacements
- Monitor in real-time the condition of the machines used in assembly lines

SOLUTIONS

Predictive maintenance of production line machines
Optimize your maintenance operations by being notified at the very first sign of wear or other defects on production machines and avoid costly downtime.

Quality control of spare parts
Remove any faulty parts and avoid technical problems later on the assembly line or a return of the vehicle to the quality control stage.

Quality control of finished products
Automate the inspection of your finished products and guarantee that they meet regulatory standards.

ADVANTAGES

- Increase profit by automating quality control processes
- Increase your overall production by reducing production line shutdowns

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SAFETY OF PRODUCTION SITES

CHALLENGE

The pressure for high production rates combined with the use of heavy machinery, including industrial robots, make production sites an environment conducive to workplace accidents (6.7 injuries per 100 workers in the United States in 2017). Ensuring both the safety of employees and the correct functioning of machines is essential for any company that wants to establish itself as a major player in this industry.

Industrial risks must be identified and the priority given to safety and quality in order to guarantee continuous production.

OBJECTIVES

- Ensure compliance with safety standards
- Prevent workplace accidents

SOLUTIONS

Detection of an operator in poor posture
Prevent the development of musculoskeletal disorders (MSDs) among your machine operators by analyzing their posture and identifying potentially damaging postures to be corrected.

Detection of potential risks
Activate an alert if there is a risk of a workplace accident, for example when an operator comes into close contact with a machine.

Detection of the absence of PPE or incorrectly worn PPE
Alert production site managers in real-time when a worker is not wearing his/her personal protective equipment (PPE).

ADVANTAGES

- Reduce workplace accidents
- Ensure the safest working conditions for your employees
AUTOMATION OF PRODUCTION LINES

CHALLENGE

Automation is already a very common practice in the automobile industry, but it is not always maximized to its fullest. Fortunately, new automation techniques are emerging thanks to the innovations brought by AI. These innovations in automation are paving the way for greater productivity, including the use of collaborative robots and video recognition.

OBJECTIVES

- Reduce the overall production time of manufacturing a vehicle
- Increase productivity

SOLUTIONS

Monitoring manual operations with smart cameras

Monitor the proper execution of your employees' operations by recognizing their actions with a smart camera, and monitor the progress of vehicle assembly in real time.

Vehicle Identification Number (VIN) Recognition

Automatically identify incorrect VINs and avoid scrapping an otherwise compliant vehicle.

Recognition of tools/spare parts in assembly line trays

Automatically refill trays when there are no more spare parts or when a tool is missing.

Forklifts and autonomous factory equipment:

- Collision detection
  Analyze the trajectories of workers and vehicles to avoid collisions.

- Pallet management
  Free up floor space by automatically stacking unused pallets and discarding damaged ones.

- Vision system for autonomous factory equipment
  Detect any obstacles, including people or sign posts, in order to effectively guide your mobile equipment within the aisles of your production sites.

ADVANTAGES

- Increase production rates by automating low value-added tasks
- Improve flow of production lines with accurate control systems
SELF-DRIVING CAR

CHALLENGE

Self-driving cars undoubtedly represent the greatest revolution of recent times in the automobile industry. With the first models set to be commercialized by 2025, it is necessary for automobile companies to position themselves now in order to remain competitive and find their place in this emerging, highly competitive and lucrative market (the value of the autonomous vehicle economy is estimated to hit $7 trillion worldwide by 2050).

Video recognition is at the core of autonomous driving systems: cameras are among the many sensors that equip these cars of the future, and video recognition allows the analysis of video streams to safely guide the vehicle through its environment.

OBJECTIVE

- Remain competitive by developing a self-driving car model

SOLUTIONS

Autonomous driving system powered by computer vision
The following is a non-exhaustive list of the many video recognition features that need to be developed when designing an autonomous car:

- Detection of urban property
- Detection of sign posts
- Detection of pedestrians and moving vehicles
- Detection of weather conditions
- Detection of obstacles

Anonymization system for personal data
In order to meet General Data Protection Regulations (GDPR), it is necessary to anonymize license plates and other personal data, such as faces, before video streams are processed.

Looking for a data management and video stream annotation tool to build your autonomous driving systems? Try Deepomatic Studio®.
Deepomatic provides an end-to-end deep learning platform that enables companies to build and operate image and video recognition applications at industrial scale. Data scientists and business executives use Deepomatic Studio® to design custom video recognition systems and Deepomatic Run® to operate image recognition applications in production.

We help enterprises increase the efficiency of operational processes (anomaly detection, behavior monitoring, self checkout) and solve specific business challenges across targeted industries (infrastructure, facility management, retail, catering, oil and gas)... 

The applications developed by our clients are among the most advanced use cases in the world. The Compass group operates corporate restaurants. By simply taking one picture of each meal tray, Compass has developed a fluid cash register system that benefits 5000 people every day (this is a world first). The Abertis group develops tolls where vehicles are charged without going through any gates and without using anything other than cameras.
WHY US

END-TO-END SOLUTION
From design to large-scale production, our products and partners support businesses every step of the way, whether it is annotating data, training AIs, or installing and maintaining AI-specific hardware.

OPEN THE BLACK BOX
All of the applications developed, in particular datasets and algorithms, belong entirely to the client.

PRODUCTION-READY IN 3 MONTHS
Our easy-to-use software allows operationals as well as data scientists to quickly create best-in-class, production-ready AI applications. Businesses can expect a ROI in less than 3 months by deploying an AI on an industrial scale.

EDGE DEPLOYMENT
We help entreprises deploy and monitor AI-ready edge devices at scale to comply with hardware and security hardware constraints.

THEY TRUST US

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INDIGO  emovis  RATP
SANOFI  COMPASS GROUP  BELRON
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