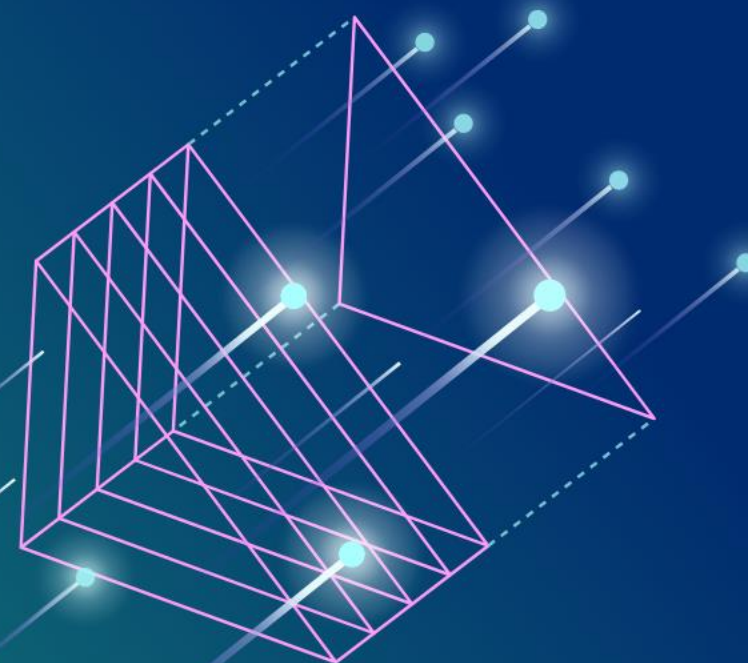


Industrial and Trustworthy AI

Development of a Vision Guided Robotic Solution



ORGANISED BY:



IN COLLABORATION WITH:



UNDER THE AUSPICES OF:





Mario Acosta

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Area of Artificial Vision and DL

CTAG – Automotive Technology Center of Galicia



- Private RTO in NW Spain.
- Around 1000 employees
- R&D + innovation and services
- Focused in automotive, transferring knowledge to the other sectors.
- Main technology fields:
 - **Processes and Industry 4.0**
 - Product design and simulation
 - Validation and testing
 - New materials
 - Electronics and ITS
 - Passive safety



Context

- Traditional robotic solutions offer robustness and reliability but are susceptible to failure due to external factors, such as process variation or misconfiguration.



Objective

- To develop a robotic system with the ability to:
 - Detect the position of a surface of interest.
 - Track it in real time.
 - Respond to trajectory and speed variations.
 - Offer ease of configuration and process flexibility.



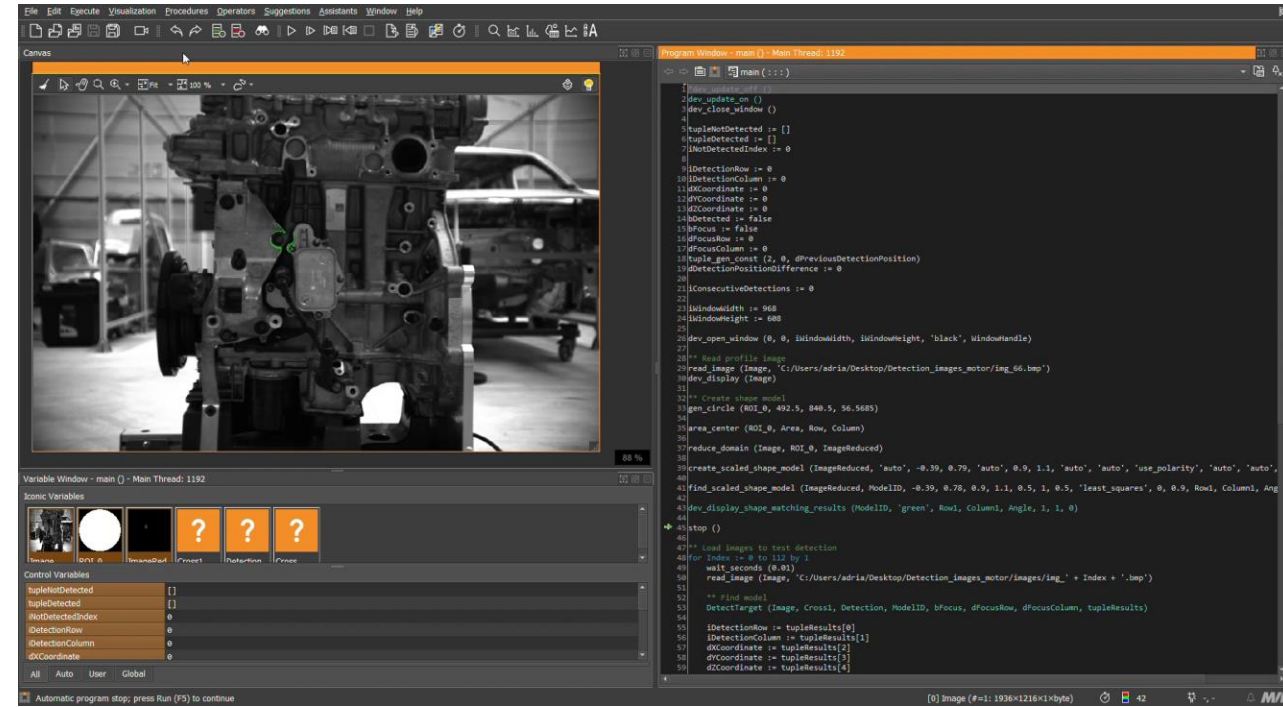
Development Process of our system

- We collaborated with the factory in order to:
 - Define requirements
 - Share the development of the solution
 - Create test environments for future deployments
- This system opens the door to future developments, in order to solve automation problems and ease the interoperation of factory lines.

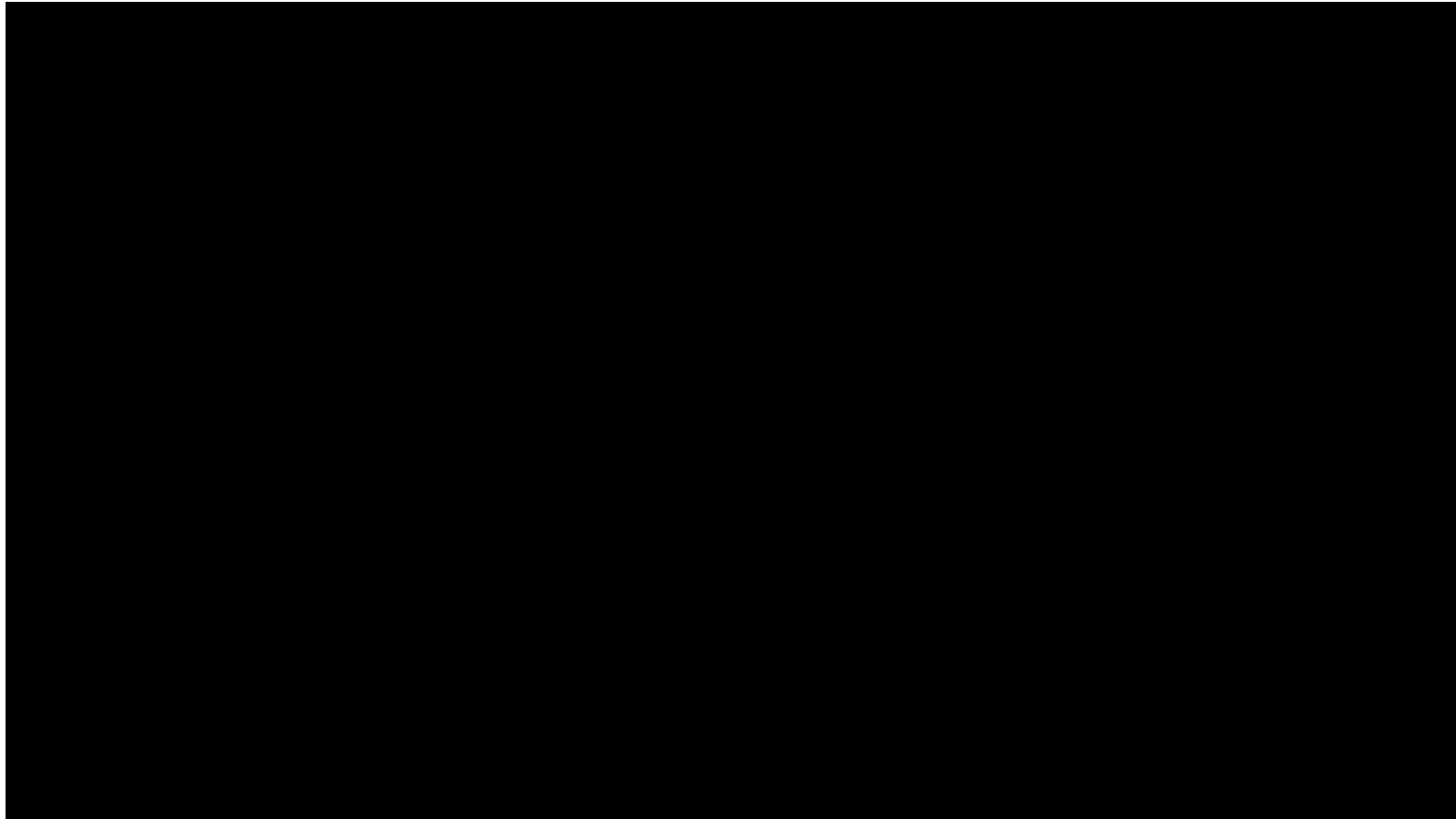


Deep Learning and Industry 4.0

- We take advantage of modern technologies such as Deep Learning in the context of object detection to give robustness to otherwise difficult to control situations.

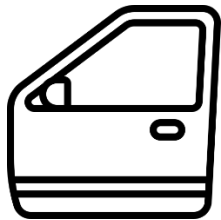


Current state of the technology

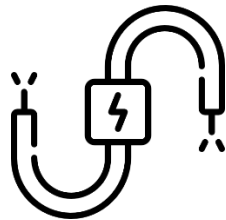


Potential Use Cases

- This system is useful in situations where high flexibility and adaptability are important for a successful operation.



- Rubber assembly, plastic assembly, fitting of interior components...



- Connection, wiring...



- Assembly and disassembly of complex engine parts, maintenance...

Acknowledgements

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Thank you!

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