

SCROLL #1

1st Project Newsletter 08/2024



AUTONOMOUS DEFECTS DETECTION
AND REPAIR IN MANUFACTURING

Dear Readers,

**Welcome to the 1st edition of
MAGICIAN Scroll!**

Our project newsletter will provide you with updates on our project activities, latest project results, upcoming events in the area of AI, Robotics, and automated manufacturing processes, as well as news on current developments in AI and Robotics.

MAGICIAN is an EU co-funded project. We want to shape human-robot collaboration in manufacturing towards a human-centred focus on trust and safety while making processes more efficient through automation.

We will develop AI-driven robotic modules for defect detection and repair in manufacturing processes. In doing that, we dedicate special attention to understanding and incorporating human experience, motivation and behaviour.



10 PROJECT FACTS

MAGICIAN has completed its 10th project month, a perfect opportunity to present you our project in 10 facts!

#1 Robotic solutions

We will develop two AI-driven robotic solutions to identify and repair aesthetic defects in manufacturing products autonomously.

#2 Contributing to a healthier and safer workspace

Detection and removal of defects are physically demanding tasks performed in a hazard-prone environment. By shifting these tasks to robots, workers can operate under safer conditions.

#3 Human-robot collaboration

Robotic solutions will be developed following a human-centred design strategy. That includes collecting broad input from stakeholders, for instance workers, and feeding it into the design process.

#5 Use Cases

Our first use case is the Turkish automotive manufacturer Tofaş who is also one of our project partners.

#7 Additional use cases

We will launch two Open Calls for SMEs and Start-ups to extend our solutions and experiment them in new use cases. This will ensure that the solutions can be transferred to multiple manufacturing application fields.

#9 EU Funding

MAGICIAN is an EU Co-funded project and as such carries a magical acronym which stands for *iMmersive leArninG for ImperfeCtion detection and repAir through human-robot interaction*N. Since we know each other now, feel free to refer to us as simply as MAGICIAN.

#4 Partners

We have eleven project partners from seven countries working together with a combined expertise of industry, research, business support and digital solutions.

#6 Learning from human workers

Robots will learn from human workers both physical movements and visual recognition involved in defects detection and removal.

#8 Open Calls

Each of our two Open calls will fund up to 5 SMEs/Start-ups which will receive up to 200,000 € funding for their proposed project.

#10 Project Lifetime

MAGICIAN has still an exciting journey ahead! It will run for four years from October 2023 until September 2027.



MAGICIAN PROJECT KICKED OFF!

MAGICIAN kicked off with a first meeting of the eleven project partners in Trento, the coordinator's hometown, on 16th-17th October 2023. The project partners exchanged on how each partner contributes to MAGICIAN objectives, the timeline of activities, and respective areas of expertise.

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PARTNERS VISIT TOFAŞ



The automotive manufacturing company TOFAŞ provides MAGICIAN's first use case to test the robotic modules developed in the project. To get a better understanding of the test site and define the use case, MAGICIAN partners Uni Trento, CRF, FORT, Lund University, HWH and Altinay visited TOFAŞ' s production site in Bursa, Turkey.

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MAGICIAN @ S3 EVENT IN TRENTO

University of Trento was invited to take part in an S3 (regional smart specialization) event in Trento to meet and exchange with regional stakeholders from research and business. Our coordinator also presented the Open Innovation Scheme implemented in MAGICIAN as a support instrument for SMEs.

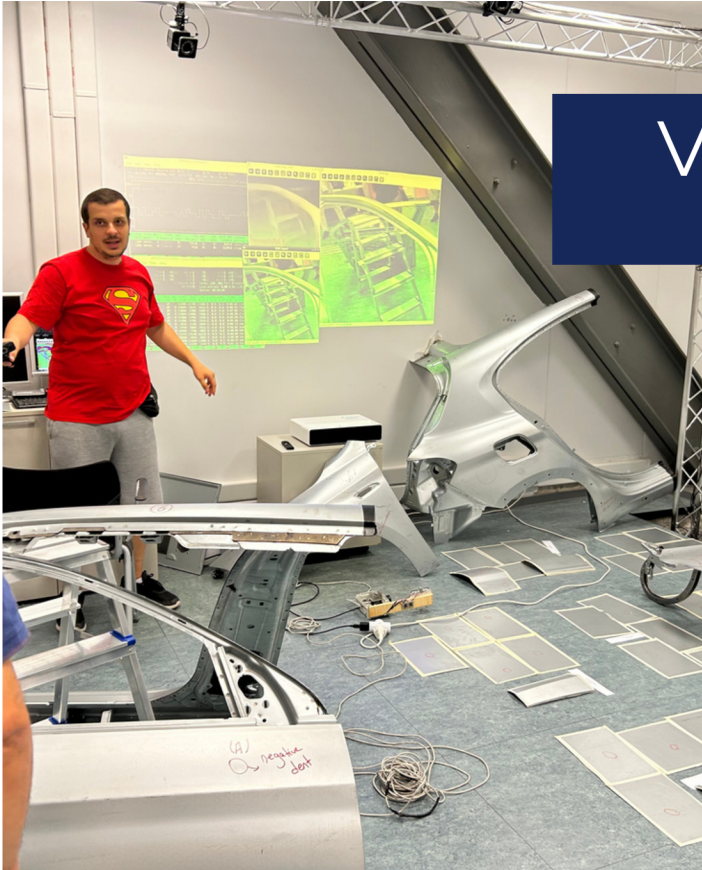
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MAGICIAN GOES ICRA 2024

The University of Trento research team attended the IEEE International Conference on Robotics and Automation in PACIFICO Yokohama (ICRA 2024) which took place in Yokohama, Japan from 13th-17th May.

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VISITS TO FORTH AND IIT

The University of Trento team took exploratory visits to FORTH and iit at the beginning of July 2024 to gather a deeper understanding of how the perception system and the reworking system respectively will be integrated with the robotic solution. The visits resulted in a clear identification of next development steps.

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SPOTLIGHT ON: UNIVERSITÀ DI TRENTO

Here is **our coordinator Università di Trento**, and more specifically the Department of Engineering (DII) and the Interdepartmental Laboratories on Robotics (IDRA) for you in a **#magicalcountdown!**

#905 students enrolled in the Department Of Industrial Engineering (DII)

#49 active Phd students in the Department Of Industrial Engineering (DII)

#25 Laboratories in the Department Of Industrial Engineering (DII)



#6 research expertise areas in Robotics & AI represented by IDRA – Interdepartmental Laboratories on Robotics.

- Measurement and estimation theory
- Predictive algorithms for human movement
- Control Theory
- Mobile mechatronic/robotic systems (legged, wheeled, flying) and manipulator arms,
- Control algorithms with Machine Learning
- Enabling technologies

#3 research application areas, namely health, manufacturing, and agrifood.

#4 national research projects, #1 international research project, and #2 EU projects involvement in robotics and AI

Among others:

- **INVERSE**: Interactive robots that intuitively learn to invert tasks
- **STARLIT**: SafeTy Aware Reinforcement Learning for robotic inspection
- **SPECTRO**: SPecialised Education programmes in CybersecuriT y and Robotics

UPCOMING EVENTS

GMEE Forum Nazionale delle Misure
12th-14th September 2024, San Vincenzo (IT)



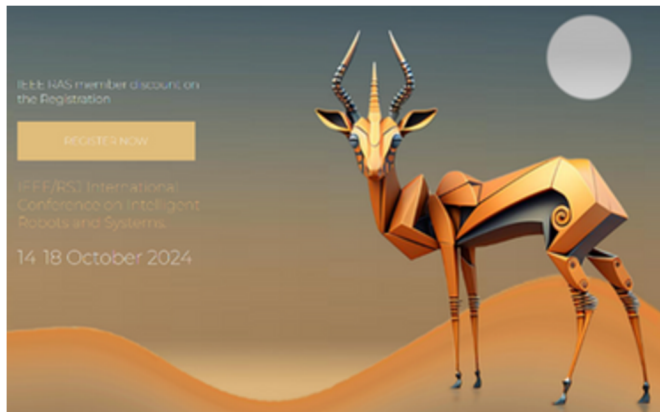
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IMEKO World Congress
26th-29th August 2024, Hamburg (DE)



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**IROS – International Conference on
Intelligent Robots and Systems**
14th-18th September 2024, Abu Dhabi (UAE)



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AI, Data, Robotics Forum
4th-5th November 2024, Eindhoven (NL)



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Engage with us!



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