EUROPEAN ROBOTICS FORUM
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Towards applied AI in agile production, logistics, and lab automation

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Virtual ERF 2021

April 14th, 2021

Agenda

14:05 **Introduction and definition of key questions**

14:10 **Innovation in Applied AI**
Prof. Markus Vincze, Technical University of Vienna

14:25 **Applied AI in Logistics and Industrial Automation**
Dr. Michael Suppa, Roboception GmbH.

14:40 **Applied AI in Industrial Automation in EC projects ODIN and THOMAS**
Dr. Niki Kousi, LMS, University of Patras, Greece.

14:55 **Challenges and Requirements from the Lab Automation Perspective**
Dr. Patrick Courtney, Tec-connection

15:10 **Interactive session/round table discussion**

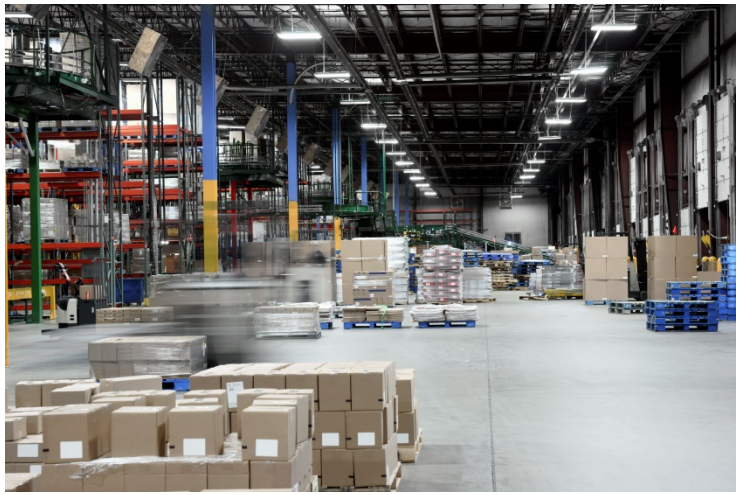
15:20 **Conclusion for roadmapping and take-home message**

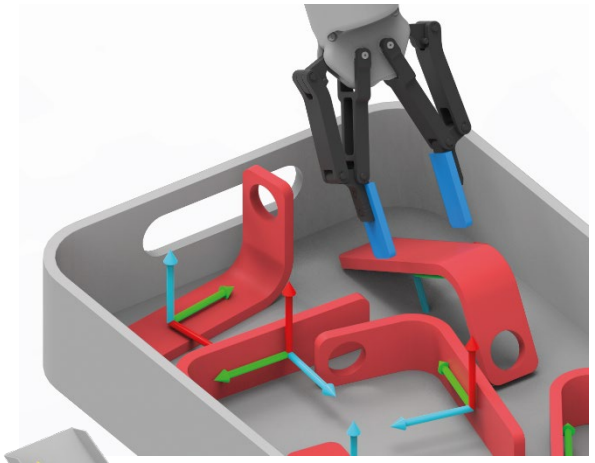
Link to the website: http://roboception.com/erf2021

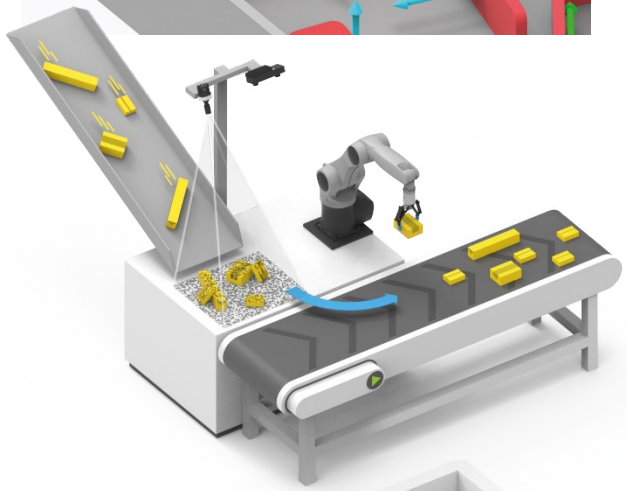
Market Requirements

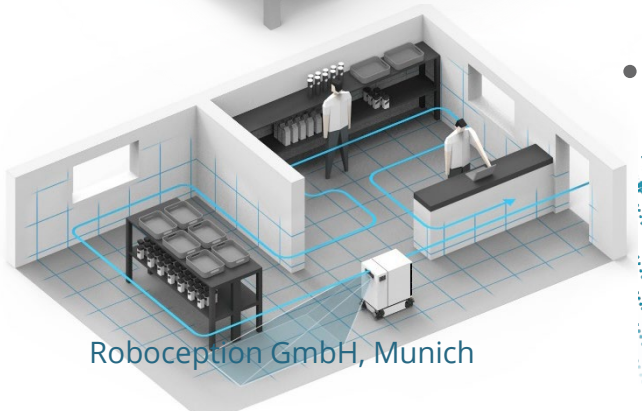
FELXIBILITY IS KEY

- Perception and manipulation systems must be tightly coupled
- Flexible production requires detection and localization of the workpieces in variable positions
- Users need intuitive and integratable robotic solutions **without** being “perception” experts
- Ready-to-use and easy-to-use functionality









Flexible Automation

PERCEPTION IS THE KEY TECHNOLOGY FOR FLEXIBLE AUTOMATION

- In flexible automation, robots must be able to reliably detect and locate work pieces and human collaborators und varying illumination, work pieces type and locations
- In **logistics**, manual work is still pre-dominant due to the complexity of tasks and the variation of objects.
- In **industrial automation**, accurate placement is usually the key challenge
- In **lab automation,** usually fragile and transparent objects must be handled in the processes including human interaction
- Individual engineering of solutions is costly and does not scale

Flexible Automation

REQUIRES A FAST ADAPTATION OF A SYSTEM TO NEW ENVIRONMENTS

- Avoid approaches that require an extensive re-training of the system in changing environments
- Combination of learning and model based approaches show great potential
- Business models for open source software and commercial platforms including data models

Key Questions for Discussion

1. What expectations are connected to AppliedAI from a provider and customer perspective?
2. Which are major challenges and potential step changes in the domains logistics, industrial automation and lab automation, i.e. what is required in order to increase flexibility
3. Which role do new business models in terms of data/software tools/platforms/ecosystems play and how are they perceived by the customers?

Statements

Applied AI Overview:
Prof. Markus Vincze,
Technical University of Vienna

Applied AI in Logistics and Industrial Automation:
Dr. Michael Suppa,
Roboception GmbH

AppliedAI from the Lab Perspective:
Dr. Patrick Courtney
Tec-connection

Applied AI in Industrial Automation in EC projects ODIN and THOMAS:
Dr. Niki Kousi
LMS, University of Patras

Perception Group

CLOSING

Workshop Slides:
http://roboception.com/erf2021

Interest in participating in TG Perception:
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and/or registration at
https://sparc-robotics-portal.eu/