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Award for Talent in Robotics: Presentation of the Fifth KUKA Innovation Award

Augsburg/Hanover, April 2018 – KUKA rewards outstanding concepts in the area of human-robot collaboration outside of industrial environments. The automation specialist is presenting the prestigious KUKA Innovation Award at Hannover Messe.

Five teams will demonstrate their "Real-World Interaction Challenge" ideas directly at the KUKA booth over the course of the trade fair. The finalists had six months to implement their projects using KUKA technologies.
At the world's largest industrial trade fair, the teams will show what they have accomplished: they will demonstrate their developments to visitors in presentations every day at 10 a.m., 12 noon, 2 p.m. and 4 p.m. at Booth G03 in Hall 17. Their aim is to convince the high-caliber expert jury of the benefits of their applications. Dr. Bernd Liepert, KUKA Chief Innovation Officer and patron of the competition, will award the 20,000-euro prize at the KUKA booth on 26 April at 11 a.m.

KUKA Innovation Award 2018: The Task

All contestants were tasked with developing a realistic application for the "Real-World Interaction Challenge". The main focus here is the direct assistance given to humans by the robot as well as the direct interaction of the robot with its environment. KUKA has provided each finalist team with a flexFellow. This is a mobile platform with a KUKA LBR iiwa, a sensitive lightweight robot for safe human-robot collaboration. The Munich-based start-up Roboception has also provided each finalist with a 3D vision sensor for their project.

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The 2018 Finalists

Team Alberta: The group from the University of Alberta is working on an image-guided motion control system for the gripping and sorting of objects which works even in unstructured environments. This includes the application of procedures through which the robot learns from the human operator. In this way, the human operator can work directly with the robot to teach it how to grip and sort objects – even if the objects are initially unknown.

Team CRoW: The team from the University of Stuttgart aims to provide small and medium-sized companies with access to robot-assisted methods of work. The concept includes a collaborative robot workbench with an augmented reality interface. The project demonstrates a woodworking scenario in which a robot assists a human in the construction of a three-dimensional work of art.

Team CoAware: The objective of the project from the experts at the Istituto Italiano di Tecnologia is to deploy robots to ergonomically support and guide humans through their tasks in laborious industrial processes in order to ease the strain on them and prevent injury. For example, the robot monitors the dynamics and posture of the human operator in real time during collaboration and adapts accordingly.

Team DynaMaP: The team members from Draper as well as MIT and the Agile Robotics Lab from Harvard aim to show that robots can also orient themselves in unstructured environments and execute tasks there. For this, the team uses neural networks to determine the positions and interactive dynamics of objects in the environment. This concept will be demonstrated in a robot system which can serve ice cream to visitors.

Team UPEnD: The team from the University of Pennsylvania is tackling the challenges that arise when working with containers filled with liquids as well as those presented by exact dosing as it relates to the pharmaceuticals industry. To achieve this, the laboratory environment is replicated and the sensors of the robot arm as well as two camera systems are used for control.

Find out more about the history of the KUKA Innovation Award and past winners under: https://www.kuka.com/innovation-award