



Platform for science and industry: KUKA at ICRA 2018 in Brisbane

Augsburg/Brisbane, May 2018 – KUKA is presenting two human-robot collaboration applications at the IEEE International Conference on Robotics and Automation (ICRA). The conference is one of the most important international events for the robotics community. This year's conference will take place in Brisbane, Australia from 21 to 25 May.

“Our claim is to be pioneers and to create innovative solutions on the basis of research and development. Scientific discourse and research projects between KUKA and universities, with their smart ideas and innovative approaches, are very important to us in the preliminary phase of product development. ICRA is the ideal platform for this,” says Dr. Rainer Bischoff, Head of KUKA Corporate Research. KUKA is presenting two innovative projects based on human-robot collaboration (HRC) at ICRA.

Innovative medical robotics: KUKA LBR iiwa provides assistance during knee arthroscopy

In collaboration with Queensland University of Technology (QUT), KUKA is presenting a conceptual study on how to simplify knee arthroscopy procedures. The procedure in question is complicated and hard to master. This is because it is difficult for doctors to see into the knee and to navigate the small vacuities of the knee joint using the instruments available. Ultrasound sensors are required in order to see and track tissue and instruments three-dimensionally and in real time.

The KUKA LBR iiwa, a sensitive lightweight robot, provides assistance during this ultrasound examination. The technically advanced sensors and algorithms of the robot make it possible to guide the sensor head over any given surface

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with a uniform degree of pressure. Additionally, software based on deep learning has been developed in order to evaluate the ultrasound images automatically.

The sensitive, lightweight LBR iiwa robot plays tic-tac-toe

The second exhibit provides insight into the possibilities of HRC and flexible robot control: a sensitive LBR iiwa robot plays tic-tac-toe with conference attendees. The visitors start the game by placing either a cross or a circle on the grid. By touching the robot, the visitors let the robot know that it is its turn. In this way, the visitors and the robot can take it in turns to place game pieces. The algorithm required to work out the moves is programmed on the controller itself using Java. The fact that KUKA has opted to use standard IT technology for application programming is a huge advantage, especially for researchers and developers without in-depth knowledge of robotics.

KUKA sponsors Best Paper Award in the field of service robotics

In addition, outstanding young scientists will be presented with the Best Paper Award, which is sponsored by KUKA, at the IEEE RAS Awards Lunch on 24 May. Prior to the event, young scientists from around the world were given the opportunity to submit technical papers. From over 1000 submissions, a jury of experts selected three teams for the final. The finalists are presenting their projects to the experts in Brisbane on 23 May.

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KUKA is a global automation corporation with sales of around 3.5 billion euro and around 14,200 employees. As leading global supplier of intelligent automation solutions KUKA offers its customers in the automotive, electronics, consumer goods, metalworking, logistics/e-commerce, healthcare and service robotics industries everything they need from a single source: from components and cells to fully automated systems. The KUKA Group is headquartered in Augsburg.