



Presse-Information Press release

More efficient welding processes thanks to robotics and digitalization: KUKA shows innovation project at the IROS research trade fair

Augsburg/Macau, November 2019 – In cooperation with the Hong Kong Applied Science and Technology Research Institute, KUKA is showing how new technologies help minimize complexity, costs and time in production at this year's IROS in Macau.

The application at the International Conference on Intelligent Robots and Systems shows a robot welding system on a workpiece. First, the user defines the welding path in the virtual world using a 3D model of the workpiece. Thereafter, everything runs automatically: a camera detects the workpiece and determines its pose in space and in relation to the robot. For this, various algorithms come into play in order to estimate the position – some using artificial neural networks – and to plan the motion. The robot then executes the determined process path. A laser pointer helps to visualize the welding process.

Faster, simpler and less expensive thanks to digital images

The combination of simulation in the virtual world and camera-based automatic calibration in the real world enable the system to adapt quickly to new workpieces and potential variations. Processes can also be checked and optimized in the simulation. Digital twins help to minimize the complexity of the design and thus to reduce cost and time.

A classic carnival game re-imagined

In a very special version of the popular reaction game “Whac-A-Mole”, visitors also have the chance to compete against a KR 3 Agilus robot at the KUKA booth. Small toy robots appear at random in holes in a board. Visitors must use a rubber mallet to strike them back into their holes. Who can react faster – the human or the robot?

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About IROS 2019

The International Conference on Intelligent Robots and Systems is one of the most important robotics conferences worldwide. This year, a new record number of about 4000 international experts are expected to come together to exchange views on the latest innovations and technical developments in workshops, forums, discussions and the accompanying robot exhibition. In addition to the exhibition, KUKA will be actively involved in forums and workshops, including the CEO forum, the Industrial Forum and the workshop on the topic of “Intelligent Robotics Research” to encourage the exchange of ideas between industry and research. The conference is sponsored in part by the IEEE (Institute of Electrical and Electronics Engineers), as well as by other associations and societies.

KUKA

KUKA is a global automation corporation with sales of around 3.2 billion euro and roughly 14,200 employees. As one of the world’s leading suppliers of intelligent automation solutions, KUKA offers customers everything they need from a single source: from robots and cells to fully automated systems and their networking in markets such as automotive, electronics, general industry, consumer goods, e-commerce/retail and healthcare. The company is headquartered in Augsburg. (As at: 31 December 2018)