

Blind bin picking

GripperAI from Festo for robotics solutions from IBK

The software GripperAI from Festo enables "blind bin picking" and thus autonomous handling solutions with almost any robot, cobot or Cartesian gantry. The company ibk Ingenieur Consult GmbH is offering an online configurable robot cell as an entry-level model. This could become the patent solution for many gripping tasks, including customised designs and integration services.

Which user of robot, cobot or Cartesian gantries doesn't dream of being able to recognise and grip unfamiliar objects or objects that have not been taught in, including automatic gripper changes. The GripperAI from Festo might just make this dream come true in the not too distant future. With conventional solutions, you either have to teach in using CAD or manually teach in the robot's movements.

Partnership promotes productivity

Festo and ibk are now expanding their partnership and entering the market with a joint robotics solution for machine and system builders as well as system and factory operators. The aim of the partnership is to enable different product variants to be produced in an automated, flexible and more cost-efficient way. In addition, it will also offer comprehensive solutions for typical picking tasks in logistics.

Shorter product life cycles require flexible machine and system concepts. Due to staff shortages, there is a demand for automated, but also flexible, preferably self-learning automation solutions for manufacturing and logistics. This is the only way to reduce business and operational risks during investment and operation. Festo and ibk support the development of flexible and adaptive production processes, realised with an innovative AI algorithm for gripping any parts.

"With GripperAI, we are releasing the first robotics skill or capability for autonomous systems. But we are already working on other challenges, such as dynamic movement planning and the optimal packing of boxes. They will expand our portfolio over the coming years," says Dr Jan Seyler, Head of Advanced Analytics at Festo.

Completely autonomous learning process

The Festo GripperAI works with any robot, cobot or handling system with path interpolation. Unlike many existing solutions, the Festo GripperAI is actually an autonomous solution. The

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vision systems or robots from many manufacturers learn based on images/CAD or robots are manually taught in through continuous "practice" of a movement or image recognition and gripping point calculation. The Festo GripperAI, on the other hand, follows a completely autonomous learning process and enables genuine "blind bin picking" for any parts. This even works with simple and inexpensive 3D cameras.

Pre-trained skills (capability) to select parallel or vacuum grippers are available and are adapted or further developed according to customer requirements. These skills are offered as a set within the GripperAI suite, as well as individually or modularly. Users thus only pay for what they really need.

"With the Festo Grasping Dataset, we focused on being able to generalise our AI capabilities right from the very beginning. This modular and highly innovative product is proof that we have succeeded in doing this," emphasises Michael Sinsbeck, who is largely responsible for training the GripperAI in Festo Research.

Flexible in every way

If the application requires a lot of flexibility for changing several tools, the tool change can be triggered via the Festo GripperAI. In future, new functions such as positioning and feeding can be realised by the module. Its implementation is flexible and can be done on the gripper/tool itself, for example via RaspberryPI, on a PC on the robot or in the camera, or a cloud connection can be established.

The pricing model also offers considerable flexibility. While it is possible to make a one-off purchase of the complete GripperAI suite, it is recommend to get one licence per required skill with annual renewal and update service. A pay-per-use approach is in preparation, for example via Blockchain technologies. With system integrators such as ibk IngenieurConsult GmbH, the integration service on the robot and the customer-specific adaptation are offered as a solution package.

"The advantage for us of working together with ibk is that complete robot and automation cells can be selected and ordered in the online shop, and at a fixed price. This creates a low-threshold offer for many target groups, from laboratory automation to SMEs and logistics to the automotive industry," says Eberhard Klotz, Global Sales Director for Industry 4.0/Digitalisation at Festo.

Michael Becker, Sales Manager at ibk IngenieurConsult GmbH adds: "The innovative technologies from Festo such as this GripperAI are a milestone for us since they enable us to position ourselves at the forefront of the market and offer further unique added value."

About Festo:

Festo SE & Co. KG is a global player and an independent family-owned company with its headquarters in Esslingen am Neckar, Germany. The company supplies pneumatic and electric automation technology to 300,000 customers in the fields of factory and process automation in over 35 industry segments. The products and services are available in 176 countries. Among other things, Festo offers a universal software solution for robots with its GripperAI, in addition to its AI-based software suite Festo AX with solutions for Predictive Maintenance, Predictive Quality and Predictive Energy and with the Software as a Service product Smartenance as a mobile and digital maintenance management system.

About ibk:

ibk IngenieurConsult GmbH – The solution.

200 people, 45 years of experience, 5 locations, 2 companies. ibk has been impressing customers in the core markets of the automotive industry, SME and special machine building with innovative solutions in fixture and system construction for four decades now. They are trusted by major corporations. As a family-run business, however, ibk is also very familiar with the needs of its customers from the SME sector.

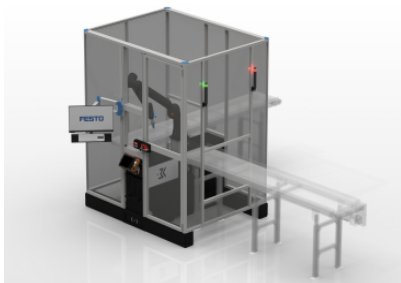
The strength of ibk lies in its ability to connect and network with other companies. Thanks to the cooperation of ibk IngenieurConsult and ibk IndustrieService, planning, simulation, design, control technology, manufacturing, assembly and commissioning form a complete process chain. This is the solution for companies looking for a single partner for all tasks.

Press Images



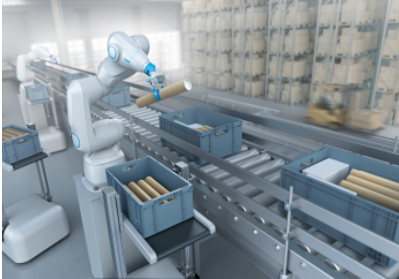
Festo and ibk

The aim of the partnership between Festo and IBK is to offer a flexible, efficient and economical way for the easy gripping of any parts using AI, thus reducing the workload on workers.



ibk CobotItemPicker – The Festo GripperAI from the CobotShop

The Festo GripperAI makes this cobot cell into something special: all parts are recognised and automatically gripped. ibk makes sure that everything is coordinated and running smoothly.



The Festo cobot and GripperAI in logistics

The Festo GripperAI uses its own neural network to calculate gripping points. It can even distinguish between different gripping techniques and change the tools itself.



Michael Becker, ibk IngenieurConsult GmbH

Michael Becker, Head of Technical Sales at ibk IngenieurConsult GmbH



Eberhard Klotz

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Dr. Jan Seyler

Dr. Jan Seyler, Head of Advanced Analytics and Control at Festo