



PRESS RELEASE

February 28, 2018 || Page 1 | 4

Intelligent robotics – Fraunhofer start-up award 2017 for Mojin Robotics GmbH

On February 27, 2018, Mojin Robotics GmbH received the EUR 5,000 Fraunhofer start-up award, a joint initiative of Fraunhofer Venture and High-Tech Gründerfonds. This year's award honors a spin-off of the Fraunhofer Institute for Manufacturing Engineering and Automation IPA. Combining, among others, semantic dialog systems and artificial intelligence, the company developed a robot that simplifies different areas of life. With its unique technology, it brings the quality of life and work to a new level. The aim is to transfer intelligent robotics from factories to everyday environments and enable users to interact with the technology in an intuitive and natural way.

Mobile robotics with versatile applications

Robotics increasingly finds its way into our everyday life. But until now, hardly any automation system exists apart from industrial applications. With the Mojin Robotics GmbH technology, they enter our everyday environments; their modularity makes them configurable for customer-specific, tailored solutions with little development effort. "Our aim is to commercialize the Care-O-bot 4® technology and automate processes in the service sector. In times of constantly declining numbers of expert staff, the robot should support human staff by executing simple tasks," says Dr. Ulrich Reiser, managing director of Mojin Robotics GmbH.

The Care-O-bot® 4 technology was developed at Fraunhofer IPA in Stuttgart and offers a wide range of applications. In particular the plug and play modules, the high-quality sensors, the patented ball joints responsible for the robot's high agility, and the multi-modal input options make the robot technology unique. The service robot is already used in smart service applications, e.g. as sales assistant, museum guide, or in patient care. Other fields such as smart home and smart industry offer numerous possible applications as well, e.g. for general household support or in automated logistics. "Times of radical technology changes have always given rise to a lot of new companies. That wasn't any different 200 years ago. In my opinion, we are experiencing a second period of major business start-up activities. The success of Germany's economy depends on how well we manage it. Mojin Robotics is an excellent example how you can use long-term technology development to launch a product on the market and be successful. With 25 spin-offs, Fraunhofer IPA is a real start-up institute, because there is a very high priority on technology transfer to the industry," Professor Thomas Bauern-

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hansl, head of Fraunhofer IPA, comments on the commercialization of the technology platform. In the long run, Mojin Robotics intends to establish a robot platform with Care-O-bot® 4 that is able to run versatile intelligent services for different industries.

PRESS RELEASE

February 28, 2018 || Page 2 | 4

A robot as a charming shop assistant

Dr. Alex von Frankenberg, managing director of High-Tech Gründerfonds, is enraptured by the technology: "We see a very high potential especially in the service sector. Skill shortages in this area will become an increasingly critical factor over the next years. Mobile service robots could counteract this trend. With the Mojin Robotics GmbH team we want to open up new applications and revolutionize service robotics." Care-O-bot® 4 already had the chance to prove itself in stationary electronics retail at Saturn. As a sales assistant, the robot named Paul was always up to date and knew the entire assortment. Without human support, he helps customers find their product in a likeable and friendly manner: "You simply have much better contact and you can tell him really everything," says a customer. Paul does not only show his sense of humor, he also adapts to each customer individually. His user-centric appearance, friendly voice, and trustworthy eyes give him his own personality; via his camera or face recognition software he is able to adapt to each customer individually. By means of artificial intelligence, he is able to capture the customers' general mood and consider it in his communication. With his ability for spatial orientation, a crowded shopping center is no problem either. By means of different sensors, the mobile assistant sidesteps other people or objects taking the shopping experience to a new level. Paul even convinced an international top-class jury and was selected the winner of the EHI Awards 2017 in the category of "Best Customer Experience". There are hardly any limitations to the robot's individuality. And even if Paul should not know an answer, he automatically calls a human salesperson for assistance and bridges the waiting time with a little dance.

About the Fraunhofer start-up award

The Fraunhofer start-up award was introduced in the scope of the new spin-off and investment strategy of the Fraunhofer-Gesellschaft in 2015. For the third time already, it honors a spin-off that is active and successful on the market and offers products or services with a direct benefit for society. With the award Fraunhofer Venture and High-Tech Gründerfonds aim to honor extraordinary start-up projects and further advance spin-off ideas within the Fraunhofer-Gesellschaft. "The unique modular service robot platform that may be implemented for numerous applications makes the Care-O-bot® technology an interesting business model. Furthermore, the multimodal sensor system enables intuitive user interaction" Thomas Doppelberger, head of Fraunhofer Venture, explains the jury's decision.

About Mojin Robotics GmbH

Mojin Robotics GmbH is a Fraunhofer IPA spin-off and offers service robotics solutions for versatile applications, e.g. for trade, museums or hospitals. Visit Mojin Robotics at EuroCIS (Feb 27–Mar 03) and the International Hardware Fair (Mar 04–07). More information: www.care-o-bot-4.de, www.mojin-robotics.de

PRESS RELEASE

February 28, 2018 || Page 3 | 4

About Fraunhofer IPA

With nearly 1,000 employees, the Fraunhofer Institute for Manufacturing Engineering and Automation IPA, or Fraunhofer IPA, is one of the largest institutes in the Fraunhofer-Gesellschaft. It has an annual budget of 64.2 million euros, with more than one third coming from industrial projects. The institute's research and development work focuses on organizational and technological issues in the manufacturing environment of advanced industries. Method, components and devices to complete machines and facilities are developed, tested and implemented. 14 departments coordinated by 6 business units work together in interdisciplinary cooperation primarily with the automotive, mechanical engineering, electronics and microsystems engineering, energy, medical and biological engineering, and process industry. Fraunhofer IPA's research aims at the economic production of sustainable and personalized products. Cyber-physical production processes define future topics.

More information: www.ipa.fraunhofer.de

About High-Tech Gründerfonds

High-Tech Gründerfonds (HTGF) is a seed investor that finances high-potential, tech-driven start-ups. With EUR 886 million in total investment volume across three funds (EUR 272 million in HTGF I, EUR 304 million in HTGF II, and a targeted volume of EUR 310 million for HTGF III) and an international network of partners, HTGF has already helped forge close to 500 start-ups since 2005. Driven by their expertise, entrepreneurial spirit and passion, its team of experienced investment managers and start-up experts help guide the development of young companies. HTGF's focus is on high-tech start-ups in a range of sectors, including software, media, internet, hardware, automation, health care, chemicals and life sciences. Investors in this public-private partnership include the Federal Ministry For Economic Affairs and Energy, the KfW Banking Group, and Fraunhofer-Gesellschaft e.V., as well as the companies ALTANA, BASF, B.Braun, Robert Bosch, BÜFA, CEWE, Deutsche Post DHL, Dräger, Drillisch AG, EVONIK, EWE AG, Haniel, Hettich, Knauf, Körber, LANXESS, media + more venture Beteiligungs GmbH & Co. KG, PHOENIX CONTACT, Postbank, QIAGEN, RWE Generation SE, SAP, Schufa, Schwarz Gruppe, STIHL, Thüga, Vector Informatik and WACKER. HTGF success stories include among others Mister Spex, Rigontec GmbH, 6Wunderkinder, Next Kraftwerke GmbH, Cumulocity or the online shop for art fans, Juniqe.

More information: www.high-tech-gruenderfonds.de



About Fraunhofer Venture

Fraunhofer Venture is a central department of the Fraunhofer-Gesellschaft and partner for founders, start-ups, Fraunhofer institutes, industry, and investors. By providing access to Fraunhofer technologies, infrastructure, and know-how with more than 5200 patent families, it offers start-ups the possibility to faster and better establish their products on the market. The range of services of Fraunhofer Venture includes comprehensive support and consulting from the idea to the start-up, assistance for finding financing solutions to a possible sale of the company and is backed by different development programs and additional services.

More information: www.fraunhoferventure.de

PRESS RELEASE

February 28, 2018 || Page 4 | 4



Care-O-Bot as digital sales assistant. © Mojin Robotics GmbH

The **Fraunhofer-Gesellschaft** is the leading organization for applied research in Europe. Its research activities are conducted by 72 institutes and research units at locations throughout Germany. The Fraunhofer-Gesellschaft employs a staff of more than 25,000, who work with an annual research budget totaling 2.3 billion euros. Of this sum, almost 2 billion euros is generated through contract research. Around 70 percent of the Fraunhofer-Gesellschaft's contract research revenue is derived from contracts with industry and from publicly financed research projects. International collaborations with excellent research partners and innovative companies around the world ensure direct access to regions of the greatest importance to present and future scientific progress and economic development.