

PRESS RELEASE

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Outstanding BMBF Funding for AI Researcher at Fraunhofer ITWM

Junior Researcher Stefanie Schwaar Establishes New Research Group for Artificial Intelligence

Dr. Stefanie Schwaar from the Fraunhofer Institute for Industrial Mathematics ITWM won the BMBF's call for tenders for funding among young female AI researchers. She will establish and head her own research group at the mathematical institute from August 2020. Under the title "EP-KI: Decision Support for Business Management Processes with the Help of New AI Methods" they will work at the interface of business management and artificial intelligence (AI). An excellent network of administration, business and research supports the group, which is funded by the Federal Ministry of Education and Research.

Today many decisions in companies and administrations are based on manually evaluated data sets. At the same time, public administrations in particular are facing a major technological upheaval in the coming years, which will lead to the digitalization of numerous progress. The Corona pandemic demonstrated that digitalization must make an even faster progress. Confirmed by the AI strategy of the government, there is great potential in the application of comprehensible AI methods to business management issues.

Stefanie Schwaar will use the BMBF funding to establish a research group explicitly for young female scientists in the field of artificial intelligence starting in summer 2020. The aim of this research funding is to establish a leading role of Germany in AI research as well as to increase the proportion of young female scientists in AI research. New staff will be recruited for this research group – with preference given to women with the same qualifications. The development of AI methods – especially machine learning algorithms - is divided into three research areas within the project: Prediction, Structural Breaks and Auto-Encoders.

A potential use case is the detection of anomalous requests, e.g. requests with typing errors or even fraud. To detect potentially anomalous requests, various existing Machine Learning (ML) methods can be used. However, these are usually not interpretable. The researchers develop a procedure that detects the anomalous requests and suggests a corrected version to the user.

FRAUNHOFER INSTITUTE FOR INDUSTRIAL MATHEMATICS ITWM**The Person Dr. Stefanie Schwaar**

»This project is going to be quite a challenge not only concerning the subject. We will try to achieve a high proportion of women in the team, and it would be great to have a first junior research group with exclusively female scientists. The advertisement for the vacant positions is already online«, says the mathematician. She has already developed Machine Learning algorithms in previous projects at Fraunhofer ITWM. In addition, the network she has already built up will help her with her new tasks. »Our new group can also build on these connections«. The researcher studied at the Brandenburg Technical University in Cottbus and the Humboldt University in Berlin, followed by her doctorate at the Technical University of Kaiserslautern. She was subsequently a post-doctoral fellow in the 1932 graduate college »Stochastic Models for Innovations in the Engineering Science«. Since 2018, the mother of two has been working in the department of »Financial Mathematics« at Fraunhofer ITWM in the field of Data Science, where she also deals with AI methods. Since the beginning of the year, she has been holding the position of business unit developer for the area of accounting verification. She is product owner in various projects of the consistently agile-organized project team.

The Cottbus-born researcher received the letter of decision about the funding in the COVID-19-induced home office with her kids in the background: »As a result of my experience with the challenges of combining family and career, I am able to create an attractive research group for young women. My husband and I completed our doctorate at the same time and founded our family during this time. We are both employed and combine this with our children aged six and nine to our complete satisfaction«, Stefanie Schwaar emphasizes.

The Fraunhofer ITWM offers the optimal conditions for families: a day-care center at the institute, a child-friendly office for care shortages and flexible working hours. With a share of 50 percent of female employees the department of Financial Mathematics stands out already the being female. Before Corona, Mrs. Schwaar stated: »New working from home was accessible communication channels and digital tools that enable employees to take part in meetings from home make life easier for me and many of my colleagues«.

Regional, National and International Support

These digital communication channels such as video meetings etc., will certainly also be used frequently in the project, as the network is broadly based: The administration of the University of Kaiserslautern supports EP-KI in administrative questions and as a data supplier. KL.digital, a SME that promotes the digitalization of the city and city administration of Kaiserslautern, enables the developed solutions to be tested locally in a practical environment. The company Governikus KG, with its experience in the field of digitalization of public administration, helps to identify issues. The company proALPHA Businesssolution GmbH is on board as a local company producing software for data management in companies.

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The group is scientifically supported by Prof. Dr. Korn (TU Kaiserslautern), Prof. Dr. Ghose (TU Kaiserslautern) and advised by Dr. Killick (Lancaster University) and Prof. Dr. Kirch (Otto von Guericke University Magdeburg). The promotion of female scientists from the group also includes a mentoring programme at the TU Kaiserslautern as well as further education measures by the ITWM, the Young Scientists' Ring of the TUK and the Fraunhofer-Gesellschaft.

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The funding code of the project is 01IS20061

Pictures



Here we go. Dr. Stefanie Schwaar from Fraunhofer ITWM with the letter of decision to become an AI junior scientist. She is establishing a new research group for artificial intelligence in Kaiserslautern.

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The Fraunhofer Institute for Industrial Mathematics ITWM

The Fraunhofer Institute for Industrial Mathematics ITWM in Kaiserslautern is one of the largest research institutes for applied mathematics worldwide. We see it as our task to further develop mathematics as a key technology and provide innovative impulses. Our focus is on the implementation of mathematical methods and technology in application projects and their further development in research projects. The close cooperation with partners from industry guarantees the high practical relevance of our work.

Its integral components are consulting, implementation and support in the application of high-performance computer technology and the provision of tailor-made software solutions. Our various competences address a broad spectrum of customers: automotive industry, mechanical engineering, textile industry, energy and finance. These customers also benefit from our excellent networking, for example in the Simulation and Software-based Innovation Service Centre.

The Fraunhofer-Gesellschaft

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 26,600, who work with an annual research budget totaling 2.6 billion euros. Of this sum, 2.2 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.