

Strengthening Research on Artificial Intelligence at KIT

The State of Baden-Württemberg Invests Six Million Euros into AI Research at Its Universities – Two New Professorships for AI Methods in IT Security and Materials Research at KIT

Artificial intelligence (AI) is deemed the future key technology entailing big opportunities for industry, but also risks for data and IT security. Karlsruhe Institute of Technology (KIT) now intensifies AI research and education by establishing two new junior professorships for AI methods in IT security and materials research. The State of Baden-Württemberg funds AI research at its universities with EUR 6 million. At the state universities, ten professorships will be established in the areas of methods and applications of AI.

The new professorships at KIT will focus on the protection of AI-based systems against attacks by hackers and on AI methods in materials research. Here, AI is used, for instance, to test ten thousand times more material candidates for use in e.g. mobile displays or batteries than by experimental methods.

“We are pooling forces to make Baden-Württemberg an even stronger location of AI research. With the new professorships, we are establishing competencies. For data evaluation, autonomous driving, smart homes, Industry 4.0, or science, development of AI methods and investigation of their applicability are of highest relevance to our society, science, and industry,” says the Baden-Württemberg Minister of Science, Theresia Bauer.

“Use of artificial intelligence will change all areas of our life. We have to shape these changes for the benefit of society,” says the President of KIT, Professor Holger Hanselka. “AI will also play an important role in research proper. Materials science and IT security are the two areas in which the new junior professorships will be established at KIT.” According to Hanselka, the KIT already is very strong in these areas. Within the Excellence Strategy competition of the federal and state governments, KIT succeeded in acquiring a Cluster of Excellence in materials research. Also risks in the areas of cyber security and data protection have long been considered by experts of KIT. “We are working on bringing the opportunities of AI in line with the risks for IT



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security,” Holger Hanselka says. Both new professorships will strengthen the competencies existing at KIT.

“AI research of KIT covers a very large range of application scenarios, from production robotics to autonomous driving to disaster management to physical support of human beings by e.g. exoskeletons,” says Professor Michael Decker, Head of KIT’s Informatics, Economics, and Society Division, in which the new professorships will be established. It is needed to develop new AI methods to solve the variety of problems encountered and, on the other hand, to learn from successful solutions in other application areas.

AI methods might even enhance security of IT systems according to Professor Jörn Müller-Quade, who heads the Cryptography and Security Working Group of KIT. “However, AI will also be used to attack IT systems in ways unknown today,” says the initiator of KIT’s Competence Center for IT Security KASTEL. “In future, attacks will probably be more successful, because AI will be used to automatically learn from previous attacks or AI systems will enable new types of attacks.” That is why it is urgently required to develop and study new methods and options to reduce attacks with or of AI systems. “It is a logical step that politics increasingly supports AI research,” Müller-Quade points out.

The junior professors shall be appointed as soon as possible for a duration of up to six years. The State Ministry for Science, Research, and the Arts will provide EUR 150,000 annually for a period of four years. KIT will bear the remaining costs in the amount of EUR 300,000 per professorship in the fifth and sixth years.

More about the KIT Information · Systems · Technologies Center:
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Being “The Research University in the Helmholtz Association,” KIT creates and imparts knowledge for the society and the environment. It is the objective to make significant contributions to the global challenges in the fields of energy, mobility and information. For this, about 9,300 employees cooperate in a broad range of disciplines in natural sciences, engineering sciences, economics, and the humanities and social sciences. KIT prepares its 25,500 students for responsible tasks in society, industry, and science by offering research-based study programs. Innovation efforts at KIT build a bridge between important scientific findings and their application for the benefit of society, economic prosperity, and the preservation of our natural basis of life.

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