Top level research on machine learning: The Leibniz-Institut für Wissensmedien as member of the new Tübingen Cluster of Excellence

The funding decisions on the new Clusters of Excellence in Germany's Excellence Strategy have now been made: The expert committee and the research ministers of the federal and state governments selected 57 Clusters of Excellence to be funded from among 88 initial project submissions on September 27, 2018. Among them is the cluster "Machine Learning in Science" of the University of Tübingen and its partners, the Leibniz-Institut für Wissensmedien (IWM) and the Max Planck Institute for Intelligent Systems. The IWM supports the top level research of the cluster with its expertise on the influence of digital media on knowledge and communication processes.

Tübingen, 28. September 2018. New technologies using artificial intelligence are set to make tangible changes to our world in the coming decades. Recent breakthroughs in the area of machine learning will make it possible. Algorithms are now able to solve ever more complex problems which previously only humans could manage. The new "Machine Learning in Science" Cluster of Excellence will analyse these developments, which promise to fundamentally change even the process of scientific investigation. The researchers aim to discover the full potential of machine learning and how it can be harnessed for science and academia in general and to understand the effects this will have on the scientific process. At the heart of their research are algorithms which recognize complex structures and causal links in data sets; methods with which uncertainties can be quantified in data-driven scientific models; and techniques enabling the researchers to better understand, interpret and control the phases of machine learning. Ethical and scientific theory issues will also be looked at.

The research of the IWM in the cluster concentrates on knowledge processes on digital platforms like Twitter or LinkedIn. Such platforms increasingly offer automatic text recognition and knowledge visualizations providing users with new resources of knowledge.

Head of the IWM Prof. Dr. Ulrike Cress is very pleased with the success in Germany's Excellence Strategy: "The close collaboration between the IWM and the University of Tübingen will be even more intensified with the new research cluster. We have already established a sound and flexible structure enabling innovative cooperation projects between a Leibniz-Institut and a university with the launch of the first nationwide Leibniz-WissenschaftsCampus in 2008. The cluster of excellence on machine learning will strengthen these synergies between university and non-university research. We are looking forward to the joint work that lies ahead of us."

Pictures: https://www.iwm-kmrc.de/www/en/presse/service/index.html

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The Leibniz-Institut für Wissensmedien

The Leibniz-Institut für Wissensmedien (IWM) analyses how digital technologies can be used to improve knowledge processes. The psychological basic research of the 110 scientists is concerned with practical fields like school and university, knowledge work with digital media, knowledge-based internet use and knowledge transfer in museums. In 2009 the IWM together with the University of Tübingen launched Germanys first Leibniz-ScienceCampus. Since 2017, this research association has been continued under the heading "Cognitive Interfaces"; the University of Stuttgart has been associated with several projects since 2018.

The Leibniz Association

The Leibniz Association connects 93 independent research institutions that range in focus from the natural, engineering and environment al sciences via economics, spatial and social sciences to the humanities. Leibniz institutes address issues of social, economic and ecological relevance. They conduct knowledge-driven and applied basic research, maintain scientific infrastructure and provide research-based services. The Leibniz Association identifies focus areas for knowledge transfer, especially in cooperation with the Leibniz museums, and informs policy-makers, academia, business and the public. Leibniz institutions collaborate intensively with universities – in form of "Leibniz ScienceCampi" (thematic partnerships between university and non-university research institutes), for example – as well as with industry and other partners at home and abroad. They are subject to an independent evaluation
procedure that is unparalleled in its transparency.