SELECTED COLLABORATIVE RESEARCH INITIATIVES

ATHENE – National Research Center for Applied Cybersecurity
ATHENE is one of the largest research centers for cybersecurity and privacy in Europe and conducts application-oriented top-level research for the benefit of the economy, society and the state. The centre is funded by the German Federal Ministry of Education and Research (BMBF) and the Hessian Ministry of Higher Education, Research, Science and the Arts (HMWK).

LOEWE Center emergenCITY
The research of the LOEWE Center emergenCITY aims to protect smart cities from disasters. For this, the centre develops resilient infrastructures that save human lives. emergenCITY is organised as an interdisciplinary and multi-site cooperation funded by the HMWK.

hessian.AI – Hessian Centre for Artificial Intelligence
hessian.AI pursues the goal of conducting excellent basic research in artificial intelligence with concrete practical relevance, and also to promote transfer to industry and society. It connects all 13 universities in the State of Hesse. The centre is managed from TU Darmstadt and funded by the State of Hesse.

LOEWE Priority Program WhiteBox
The LOEWE Priority Program WhiteBox is aimed at developing methods at the intersection between Cognitive Science and AI to make human and artificial intelligence more understandable. WhiteBox is funded by the the Hessian Ministry of Higher Education, Research, Science and the Arts (HMWK).
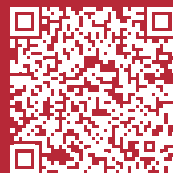
ZEVEDI – Centre Responsible Digitality
ZEVEDI is a research network which actively reaches out into politics, society and the economy. It is supported by the Hessian Minister for Digital Strategy and Innovation, and investigates ethical and legal aspects of the digital transformation, transfers knowledge into the business community, and communicates with politics and society.

TECHNISCHE UNIVERSITÄT DARMSTADT

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DIGITAL FUTURE MADE IN DARMSTADT

**RESEARCH FIELD
INFORMATION+INTELLIGENCE**

FOUNDATIONS FOR SUSTAINABLE PROGRESS IN THE DIGITAL AGE

Computational technologies are a major catalyst for innovation in all aspects of the human endeavour. In the Research Field Information and Intelligence (I+I), we bundle the research strengths of TU Darmstadt in four internationally recognized Profile Topics: Artificial Intelligence, Cognitive Science, Complex Interconnected Systems as well as Cybersecurity and Privacy. Beyond that, the Research Field connects scientists interdisciplinarily to find answers to major scientific and societal questions on sustainable progress in the digital transformation.

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„Our mission is to train brilliant minds poised to shape the digital landscape in academia and economy."
— Prof. Stefan Roth, Ph.D., Spokesperson I+I

Training talents in a strong alliance: Graduate schools, which support the development of young researchers, are an integral part of the Research Field I+I. The Zuse School ELIZA is funded by the German Academic Exchange Service. It welcomes international AI talents at Master's and PhD levels and is part of the German government's AI strategy.

UNITING EXCELLENT RESEARCHERS IN FOUR CUTTING-EDGE PROFILE TOPICS

Our research in the **Profile Topic Artificial Intelligence** covers the entire range of automation of intelligent behaviour and machine learning. Novel AI algorithms and systems are being developed to enable human-like communication and reasoning. They will also be able to recognise new situations and adapt to them autonomously.

Through research in the **Profile Topic Cognitive Science**, we aim to further our understanding of human perception, thought and action, and to emulate human-like behaviour in machines.

In the **Profile Topic Complex Interconnected Systems**, we study the comprehensive interconnectedness of the physical and digital world as well as collective behaviour at the system level to improve the performance and resilience of complex networks.

The research in the **Profile Topic Cybersecurity and Privacy** covers a wide range of topics, from basic research to applied solutions. It helps to protect people and organisations from cyber risks in the long term and contributes to a self-determined information society.

SHAPING EXPERTS FOR THE DIGITAL TECHNOLOGIES OF THE FUTURE

The digital transformation is more important than ever to ensure a competitive advantage and to drive innovation. At TU Darmstadt, members of the Research Field Information and Intelligence train highly qualified experts in Bachelor's and Master's degree programmes, equipping them with the knowledge to successfully evaluate, design and realise digital initiatives.

We also promote doctoral students and young researchers in graduate schools, such as the DAAD Konrad Zuse School of Excellence in Learning and Intelligent Systems (ELIZA) as well as the DFG Research Training Groups on Critical Infrastructures (KRITIS), Seamless Integration of Assistance Systems for Natural Locomotion of Humans (LokoAssist), and Privacy and Trust for Mobile Users.