# ARTIFICIAL INTELLIGENCE

The Office of Coordination for the network operates under the leadership of Prof. Dr. Katharina Morik at TU Dortmund University.

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#### ML2R - Office of Coordination

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The Network of National Centres of Excellence for AI Research brings together experts and knowledge from the fields of Artificial Intelligence, Machine Learning, and Big Data. In their research, they aim to advance AI technologies that place societal interests at the forefront of scientific endeavours.

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## LOCATIONS

#### 1 BIFOLD

Berlin

Phone: +49 30 314-23325 +49 30 314-73407 Email: <u>BIFOLD@ki-zentren.net</u> www.bifold.berlin

#### 2 DFKI

Kaiserslautern/Saarbrücken/ Bremen/Oldenburg/Osnabrück/ Berlin

Phone: +49 681 85775-5388 Email: dfki@ki-zentren.net www.dfki.de

#### 3 MCML

Munich

Phone: +49 89 2180-9191/9190 Email: mcml@ki-zentren.net www.mcml.ai

#### 4 ML2R

Dortmund/Bonn/St. Augustin Phone: +49 231 755-8126 Email: <u>ml2r@ki-zentren.net</u> <u>https://www.ml2r.de/</u>

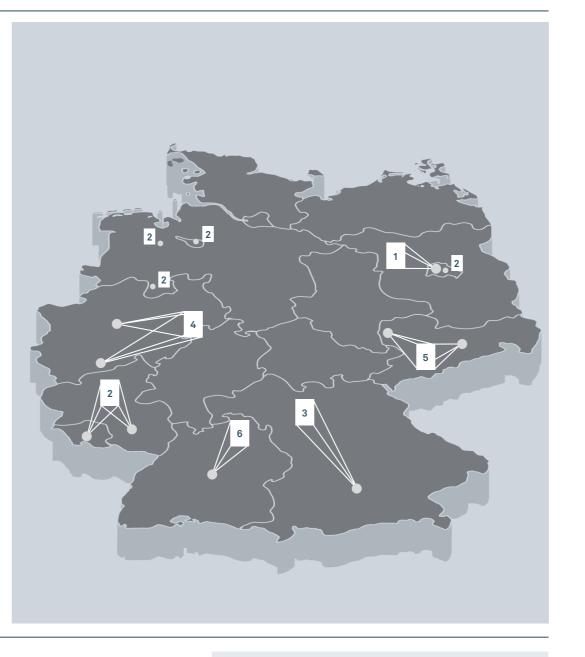
#### 5 ScaDS.Al Dresden/Leipzig

Dresden/Leipzig Phone: +49 351 463-35450 Email: <u>scads.ai@ki-zentren.net</u> <u>www.scads.ai</u>

#### 6 TUE.Al Center

Tübingen Phone: +49 7071 29-70867

Phone: +49 7071 29-70867 Email: <u>tue.ai@ki-zentren.net</u> https://tuebingen.ai



The Centres of Excellence for AI Research are located in federal states across Germany. Joint activities, including regularly organised meetings, and events, allow for the exchange of research results, ideas, and projects as well as the implementation of mutual collaborations.

Map Germany, Network Title: freepik.com



### THE NETWORK

leading.connected.innovative.

The Network of National Centres of Excellence for AI Research is comprised of six leading research institutions in the field of Artificial Intelligence: BIFOLD, DFKI, MCML, ML2R, ScaDS.AI Dresden/Leipzig, and TUE.AI Center. Together, they work towards strengthening Germany as a top-tier location for AI technologies as well as increasing the national and international visibility of German AI research.

The synergies created in the collaboration of the National Centres of Excellence for Al Research are based on the intensive exchange of competencies and research results as well as the implementation of joint activities. In addition to the cooperation with the French national artificial intelligence research programme, international networking is actively promoted. On the basis of closely connected and cutting-edge research, the Network of National Centres of Excellence for Al Research forms a fundamental pillar for the development of future-oriented Al technologies in Germany.

Bifold – Berlin Institute for the Foundations of Learning and Data

Within the vibrant Berlin AI ecosystem, BIFOLD focuses on creating the scientific foundations of Big Data and Machine Learning as well as on their intersection to empower innovations in the sciences, humanities, and companies, particularly startups. At TU Berlin, BIFOLD combines innovative research on systems and technologies for the efficient processing of large, fast, and heterogeneous data streams and data management with research on explainable algorithms and models for machine learning.

BIFOLD not only wants to attract the world's best scientists to Berlin. We also develop the next generation of AI technologies and systems and train the future experts who speak both Big Data and Machine Learning.

Prof. Dr. Volker Markl (Director of BIFOLD)

It is time to rethink Machine
Learning and Database
Management Systems. BIFOLD
unites a broad spectrum of experts
in explainable AI, scalable machine
learning, data management and
machine learning for medicine,
the humanities and the sciences.

Prof. Dr. Klaus-Robert Müller (Director of BIFOLD)

DFKI – Deutsches Forschungszentrum für Künstliche Intelligenz GmbH

preserved by DFKI has been covering the entire spectrum of AI for more than three decades. We combine machine learning and deep learning with model-based methods. The goal is to create hybrid systems to enable human-centric, reliable and trustworthy AI assistants.

Prof. Dr. Antonio Krüger (CEO DFKI)

In addition to verification, certification and explainability of AI, we focus on the ongoing cooperation with France and the European dimension, which we also address in the CLAIRE network. This will strengthen our leading position in the international technology competition.

Prof. Dr. Philipp Slusallek (Executive Director, DFKI Saarbrücken, and CLAIRE Co-Initiator)

The German Research Center for Artificial Intelligence (DFKI) is a non-profit public-private partnership, founded in 1988. In the field of innovative software technology using AI, DFKI is the leading research institute in Germany. DFKI projects cover the whole spectrum from application-oriented basic research to market- and client-oriented design of product functions. Research and development projects are conducted in 20 research departments, 8 competence centers and 8 living labs.

MCML - Munich Center for Machine Learning

At MCML Munich's top talents in machine learning join forces to advance both the foundations of machine learning such as spatiotemporal learning or learning on graphs as well as its application in societally relevant areas through industry collaborations and start-ups.

Prof. Dr. Daniel Cremers (Director of MCML)

MCML brings together leading experts from ML, AI, data science, computer science and statistics of LMU and TUM. Our research ranges from models and algorithms for AI, unsupervised and representation learning for complex data, automatic and interpretable ML, to challenges of human-centered AI, such as computer vision, NLP, interactive data mining and visual analytics. MCML is tightly connected to other AI centers in Bavaria and beyond.

MCML bundles the best Al and ML research at LMU and TUM.
We strongly believe in a human-centric view of the field, where ML is used for advancing scientific, social and economic progress. Applicability, explainability and transfer of knowledge are core goals of MCML.

Prof. Dr. Bernd Bischl & Prof. Dr. Thomas Seidl (Directors of MCML)

ML2R - The Competence Center Machine Learning Rhine-Ruhr

ML2R stands for excellence in research, impactful transfer to business applications and benefitting society. The competence center conducts research on modular Machine Learning, knowledge integration, resource efficiency, quantum ML as well as human-oriented approaches and trustworthiness. Pioneering research institutions collaborate to foster innovation and shape the digital future: the TU Dortmund University, the Fraunhofer IAIS, the Fraunhofer IML and the University of Bonn.

Complementing my role in ML2R, I am happy to coordinate the AI centers in Germany and their cooperation with the French centers. Annual meetings are organized so that all centers can get involved. In 2019, we organized a meeting of all German and French centers at the ECML PKDD.

Prof. Dr. Katharina Morik (Spokesperson of ML2R & Coordinator of the Network)

At ML2R, with our focus on hybrid learning approaches that combine data and knowledge, we are successfully pushing forward the third generation of AI systems which learn faster from less data, are more robust, use less resources, and can be certified and trusted.

Prof. Dr. Stefan Wrobel (Spokesperson of ML2R)

ScaDS.AI Dresden/Leipzig – Center for Scalable Data Analytics and Artificial Intelligence

ScaDS.Al uniquely combines excellent research on Big Data and Al to develop scalable and trustworthy data science methods. In addition to scalable machine learning approaches we therefore investigate new methods for high data quality, knowledge management and privacy.

Prof. Dr. Erhard Rahm (Scientific Coordinator of ScaDS.Al Leipzig)

ScaDS.Al is not only working on exciting Al and data science research topics but also fosters a fast transfer of its research results into scientific and business applications. Our service center is a key enabler for new collaborations and successful transfer activities.

Prof. Dr. Wolfgang E. Nagel (Scientific Coordinator of ScaDS.Al Dresden)

ScaDS.AI (Center for Scalable Analytics and Artificial Intelligence) Dresden/Leipzig extends the national competence center for Big Data, ScaDS, established in 2014. Our research bridges the gap between the efficient use of mass data and advanced AI. We address new methods for machine learning, knowledge management and privacy preservation. Furthermore, we develop service-oriented solutions and cooperate with a wide variety of application partners from academia and industry.

The Tübingen AI Center aims to shape the next generation of machine intelligence developing more robust, efficient and accountable learning systems. We are setting up a novel public research institution to attract the best scientists in AI, train around 250 doctoral students, and generate positive impact into society. The competence center is connected through the national network of BMBF competence centers, and at the European level, through the ELLIS initiative.

TUE.AI - Tübingen AI Center

building a new research environment and invite the best minds to develop more robust, efficient and accountable learning systems. At the same time we seek to generate positive impact with applications of the new technology.

Prof. Dr. Matthias Bethge (Director of the Tübingen Al Center)

Europe is home to some of the leading international research groups in artificial intelligence. These technologies have the potential to help. With the Tübingen AI Center and in collaboration with ELLIS we want to ensure that the highest level of research in this field will continue to be performed in the open societies of Europe.

Prof. Dr. Bernhard Schölkopf (Director of the Max Planck Institute for Intelligent Systems)











