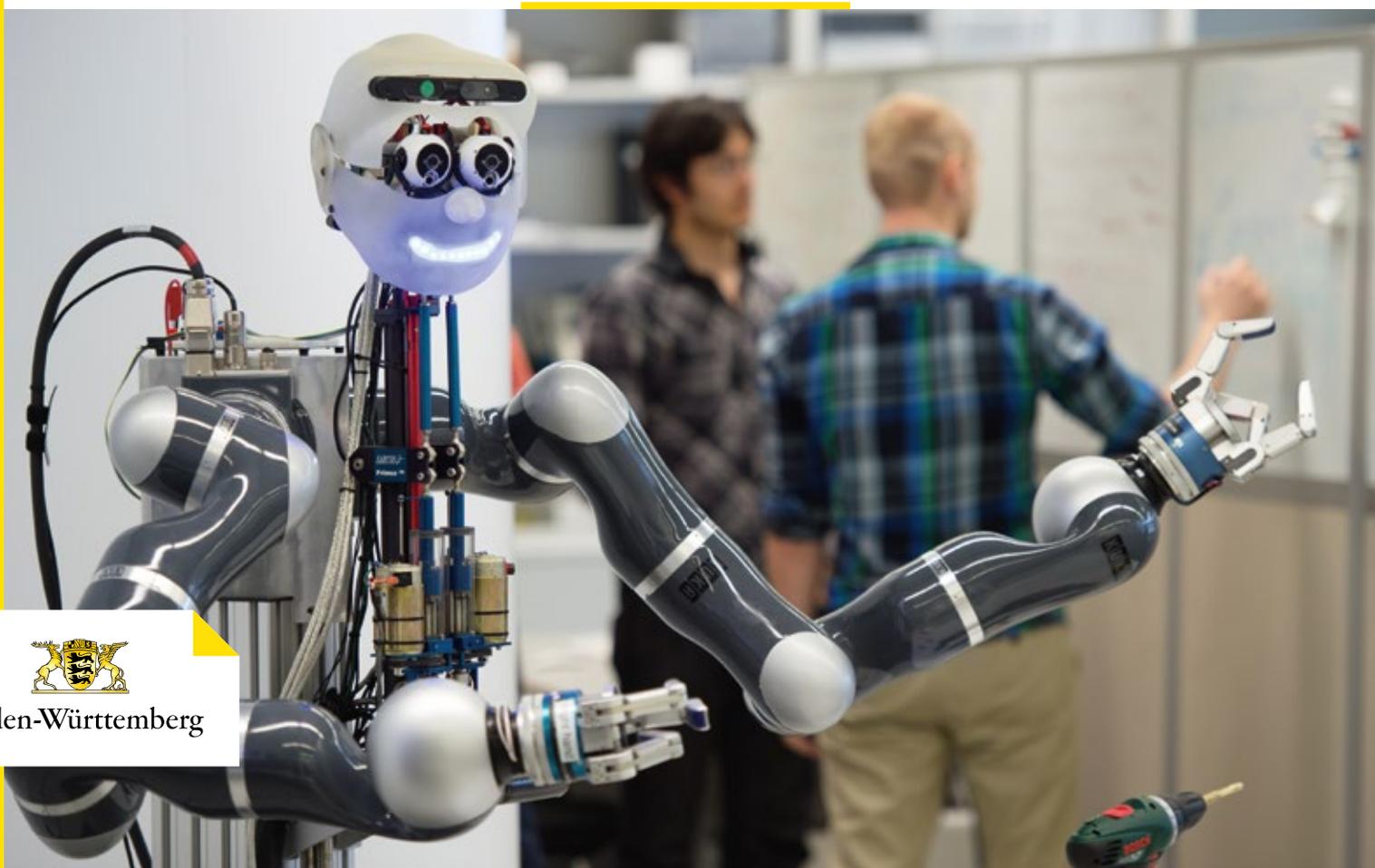**digital@bw**

BECOMING THE KEY REGION FOR DIGITAL CHANGE

BADEN-WÜRTTEMBERG LEADS THE WAY IN ARTIFICIAL INTELLIGENCE

Baden-Württemberg

THE STATE OF BADEN-WÜRTTEMBERG WILL TAKE THE LEAD IN ARTIFICIAL INTELLIGENCE
OUR STRENGTHS AT A GLANCE

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Digitalisierung für Baden-Württemberg

Under the umbrella of the state-wide digitalisation strategy digital@bw, Baden-Württemberg strives to become the world's leading region for digital change, with an emphasis on artificial intelligence (AI). Drawing on our proven strengths, we will commit to making a substantial contribution to the implementation of a national AI strategy and in European AI projects. In Baden-Württemberg, the potential of artificial intelligence is being enhanced along the **entire supply chain** (cf. AI position paper of the state government of BW). The German government can build on this progress to rapidly scale-up innovative projects and thus establish a counterbalance to the USA and Asia. **As a strategic AI partner** of the Federal Government, we are committed to substantial investment in joint pilot projects and ventures and to providing the necessary co-financing. In addition to the following measures, the state government has, **as a first step**, promptly made available a **double-digit million figure** in the current supplementary budget.

1.1.
CREATING A UNIQUE
ARTIFICIAL INTELLIGENCE ECOSYSTEM

Baden-Württemberg provides the ideal conditions that allow it to combine fundamental and application-oriented research, science and industry into a unique **ecosystem for artificial intelligence**. In addition to world-renowned companies, we enjoy a highly innovative SME sector with outstanding expertise in key areas of AI application, particularly in the manufacturing industry, mechanical and plant engineering, the automotive sector, the healthcare sector, industry-related services and software development. In no other European region are there such great opportunities to advance **Artificial Intelligence from Germany to a world-leading level.**

We can harness and develop these strengths in Baden-Württemberg, for example:

→ Together with the Max Planck Society, the universities of Stuttgart and Tübingen, and the companies Amazon, BMW, Bosch, Daimler, IAV, Porsche and ZF Friedrichshafen, we have launched „Cyber Valley": a research centre for intelligent systems that is unique in Europe. With its research excellence and networks with global companies, as well as transfer to applications and start-ups, it already ranks among the top research centres worldwide.

→ As part of the „Digital Hub Artificial Intelligence" in the Karlsruhe technology region, we are promoting AI applications, particularly in the fields of energy, mobility, medicine and production.

→ A particular strength of Baden-Württemberg lies in the research and application of cyber-physical systems.

→ Transfer organisations such as the Stuttgart Technology and Innovation Campus (S-TEC) are specifically geared to the needs of small and medium-sized businesses.

We want to **build on these strengths** in order to quickly advance breakthrough innovations from Baden-Württemberg and Germany.

→ In the context of cutting-edge research, we will further expand the Cyber Valley as a centre of excellence for technology and entrepreneurship, making it the nucleus for AI breakthrough innovations in Germany and Europe. We aim to:
  · further expand state-wide cutting-edge research through personnel and infrastructure,
  · foster cooperation and networking in top-level research at national and European level, for example at the Machine Learning Competence Centre, and promote cooperation with other enterprises, such as Industry-on-Campus,

to promote entrepreneurship in an even more targeted way in order to become an outstanding platform for AI start-ups.

→ Furthermore, we will take a focussed approach in consolidating existing strengths in application-oriented AI research, in order to further accelerate the transfer of research results to industry on a broad scale, for example in cognitive robotics.

→ We will develop the „de:hub Artificial Intelligence" into a platform for the application and commercialisation of AI and boost Franco-German cooperation.

→ We will review the establishment of further networks linked to our science hubs. One example of this are the large-scale „AI innovation parks" , which have international appeal and serve both as value creation centres for commercialisation and as test sites for practicability.

→ We will set up a programme for small and medium-sized companies with a focus on AI and support co-financing by the Federal Government in order to ensure a rapid and comprehensive transfer of knowledge to SMEs by offering pioneering services.

1.2.
RECRUITING TOP-TALENT AND STRENGTHENING AI COMPETENCIES ACROSS THE BOARD

We want to train leading AI experts and further develop Baden-Württemberg as an attractive location that brings together exceptional science and business talent and experts from all over the world.

We can harness and develop these strengths in Baden-Württemberg, for example:

→ We educate excellent scientists and emerging industry professionals at our univer-sities and research institutions. Throughout the state, we are creating 20 new professorships with a focus on AI.

→ With our Learning Factories 4.0, we are establishing a network of teaching locations that are unique to Germany and at which practical training courses are conducted based on real industry standards.

→ We have introduced compulsory computer science lessons in Baden-Württemberg schools and are thus enhancing the AI skills of our students.

We want to **consolidate these strengths** and create the foundation for exceptional talent in Baden-Württemberg to research AI and implement research results in a variety of AI applications:

→ We strive to attract top executives and young talent from all over the world. With this goal in mind, we will continue to work on making Cyber Valley achieve the necessary profile to attract the brightest minds from across the globe.

→ The BW Innovation Camp in Silicon Valley is a very effective initiative aimed at attracting top people back to Baden-Württemberg.

→ We want to step up the focus on AI in university degree programmes across the state of Baden-Württemberg. With special incentive programmes, we will also be specifically encouraging women to pursue courses that focus on AI.

→ We will continue to expand further training and qualification options, especially for small and medium-sized enterprises throughout the state. We are committed to ensuring that the Federal Government – based on the model of Learning Factories 4.0 – works together with local companies to promote AI learning laboratories and AI learning factories.

1.3.
SETTING STANDARDS:
WITH CYBER SECURITY, DATA PROTECTION AND ETHICS

In competitive global markets, we in Germany and Europe need to focus on the development of AI that is centred on people and their rights, serves the common good and is in harmony with our values. Technological dependency on countries which do not share our value systems must be avoided. In Baden-Württemberg, we consider high-performance AI technologies that protect data and personal rights and are secure against cyber-attacks to be a decisive competitive advantage.

We can harness and develop these strengths in Baden-Württemberg:

→ Our beacon projects – from personalised healthcare centres to Smart City competitions – rely on AI solutions that are secure and protect privacy. The protection of personal rights is the quality seal of our digital@bw digitalisation strategy.

→ AI poses new challenges to business and government in terms of cyber security. We invest in research and knowledge transfer for software- and hardware-based AI solutions, such as neuromorphic chips, which are configured to work like neurons. In this way we are particularly supporting small and medium-sized companies and critical infrastructures.

We will continue to **build on these strengths** by taking further measures to protect personal rights and cyber security. We also intend to cooperate closely with the Federal Government on this matter:

→ Without security, there is nothing. We are committed to ensuring that the Federal Government strengthens research and knowledge transfer in the field of IT security. With the participation of the state, the KASTEL competence centre at the Karlsruhe Institute of Technology (KIT) is to be consolidated and expanded to become a national beacon.

→ We will continue to expand research and transfer projects focusing on possible applications and cyber security across a range of areas such as health, mobility, production, sustainability as well as critical infrastructures.

→ In July 2018, we invited tenders for the research association „Society in Digital Change". In addition to developing an understanding of the ethics, it is also important to us that the public are actively involved in shaping digital change. We want to promote transdisciplinary cooperation between the humanities and social sciences,

the engineering sciences and the general population. In particular, we want to focus on changes in the world of work and sustainable development.

1.4.
DRIVERS IN
GERMANY AND EUROPE

Baden-Württemberg will bring into play its strengths in collaboration with other national and European initiatives and is a strong partner for future partnerships.

→ We seek to work closely with the German government on the **Franco-German AI Network**. We are already actively working on intensifying cooperation with other regional centres – both at a Federal State level and at a French and European level. We are convinced that only a top network of the best locations can generate the necessary profile vital for a European flagship project.

→ In order to support the German government's plans for a Franco-German network, in recent months we have begun a dialogue with potential French partners. We propose to implement the **ELLIS initiative**, an initiative of leading European AI researchers, as an important contribution to the European network. Together with the Federal Government, we want to strengthen the efficiency of the infrastructures for AI research and integrate them on a European level.

→ We expressly support the Federal Government's intention to examine whether an **Important Project of Common European Interest (IPCEI)** on AI can be implemented.

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