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Dare to innovate more: Why we should now use our competitive edge in large language models (LLM) and AI

- **Since the 1990s, Germany has been driving the development of language models that ChatGPT & Co. are now working on**
- **New VDE ITG position paper shows that the technical advantage can be used to shape AI development and maintain sovereignty**
- **VDE ITG Managing Director and co-author Damian Dudek says: "Generative AI is being pushed – with and without us. So we should stay on the ball."**

(Frankfurt a. M., 12.12.2024) The days when people were happy because the cell phone completed a word that had been started in an SMS are over. Today, we are accustomed to our cars responding when we tell them where we want to go, or to an AI searching for the song we want to hear. Behind this, highly complex technological processes are at work, because signals have to be recognized, filtered, encoded, compressed and reconstructed for all this to work. Neural networks learn and optimize themselves through every interaction. "Our impression is that many people appreciate the advantages, yet the public discussion is characterized by concerns and fears about AI development," Dudek said. "Therefore, we want to educate the public about what is technically behind the applications and where Germany can seize opportunities to shape the development rather than lagging behind it."

A sustainable future with AI: increasing efficiency instead of building nuclear power plants

The authors of the VDE ITG position paper "Large Language Models are Transformers in Artificial Intelligence, Industry, Education, and Society" point out that the economic potential of large language models such as ChatGPT-4 is only just being tapped. In their view, it is therefore all the more important to promote the technical development and industrial exploitation of LLM

in Germany and Europe and to achieve a dynamic transfer from basic research to application. The focus here is not only on the development of algorithms and software, but also on advances in the field of energy-efficient hardware to reduce the power requirements of data centers. "There is global talk of building more nuclear power plants to satisfy the hunger for energy," says Dudek. "We are talking about making data processing more efficient and reducing energy consumption so that AI can be used sustainably." If Germany were to take the lead in the world with such approaches, it would be possible to tap into completely new market potential for the benefit of society and maintain technological sovereignty.

Keeping an eye on the risks: agile regulation instead of rigid rules

In the opinion of the authors of the position paper, only by taking a leading technological position through innovation is it possible to establish a framework for ethical requirements and data security that will be accepted globally. Dudek sums up: "We need agile regulation for generative AI that keeps pace with developments and builds trust among the population. This will enable us to remain competitive and actively shape the future."

New VDE ITG position paper available for download

The position paper "Large Language Models are Transformers in Artificial Intelligence, Industry, Education, and Society" is available online for free download.

About The Information Technology Society within VDE (VDE ITG)
The Information Technology Society within VDE (VDE ITG) is a community of experts working in the field of information and communication technology (ICT). Founded in 1954, this technical society aims to pave the way for innovative technology topics, bringing them from the scientific world into our economy and society. It combines theory and practice to promote the technology topics of tomorrow, which are crucial for the digital transformation of the economy and society. The ITG sees itself as a driving force in the ICT field and supports the VDE vision of a livable and e-dialistic future.

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Our passion is the advancement of technology, the next generation of engineers and technologists, and lifelong learning and career development "on the job". Within the VDE network more than 2,000 employees at over 60 locations worldwide, more than 100,000 honorary experts, and around 1,500 companies are dedicated to ensuring a future worth living: networked, digital, electrical. Shaping the e-dialistic future.

The VDE (VDE Association for Electrical, Electronic & Information Technologies) is headquartered in Frankfurt am Main. For more information, visit www.vde.com

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