

ARTIFICIAL INTELLIGENCE

OPPORTUNITIES & RISKS

AI can support a safe and healthy working environment. But new technical possibilities can also bring new dangers. We present areas of application and explain what is important in the relationship between humans and AI.

HEALTH

Reduce physical and mental stress:

- AI-controlled exoskeletons that provide support in real time and adapt to the movements and strain placed on the user.
- AI-based wellbeing apps and wearables that provide recommendations for breaks, relaxation and exercise, for example.



RISK ASSESSMENT

Keep a constant eye on risks based on data:

- AI can support the creation and updating process by pointing out potential hazards.
- Using sensor, movement, process and machine data as well as fault messages, hazards can be continuously monitored and reassessed, patterns recognised, predictions made and preventive measures prioritised.



ACCIDENT PREVENTION

Identify hazards before something happens:

- Camera systems register missing PPE.
- Smart PPE protects against collisions or measures vital parameters (heart rate, respiratory rate, body temperature).
- Fatigue/stress detection – AI recognises warning signals of fatigue.

What is what?

- 1. Digitisation**
Information is going digital.
- 2. Automation**
Technologies that perform tasks with little effort from humans.
- 3. Robotics**
Use of robots to automate tasks.
- 4. Artificial intelligence**
A system analyses and makes decisions based on data and algorithms.

MACHINES & LOGISTICS

Experience AI as a driver or colleague:

- AI-supported assistance systems for collision avoidance in industrial trucks (camera systems with object recognition).
- Driverless vehicles drive automatically. However, they are not controlled by AI algorithms.
- Predictive maintenance for less downtime.



INSTRUCTION & QUALIFICATION

Make learning more practical and tailored to individual needs:

- AI-supported instructions – multilingual or in plain language
- Virtual simulation training



Keep in mind!

The responsibility remains with the human involved: AI only makes recommendations – **Incorrect decisions & incorrect data:** AI learns from the data. If the data is incorrect or incomplete, so are the results – **New hazards:** unexpected machine behaviour, humans relying too heavily on assistance systems, creeping deskilling, increased performance pressure, for example through the use of exoskeletons – **Data protection & surveillance:** processing of personal data, feeling of permanent control, fear of job loss – **False expectations:** AI is seen as a miracle solution, disappointment when benefits fail to materialise.