

SCIENCE . TECHNOLOGY

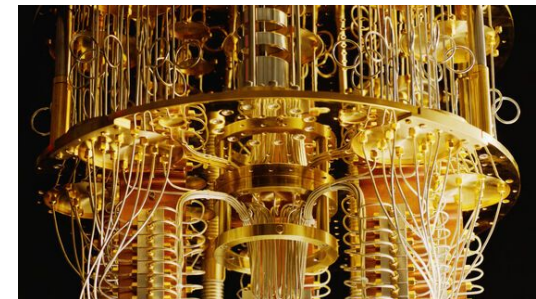
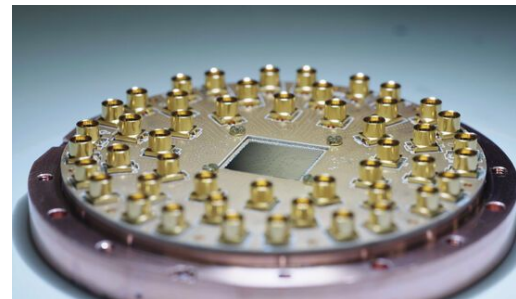
# BEYOND TOMORROW – TECHNOLOGIES OF THE FUTURE

6 x 30' (ENG, GER)

**New technologies will change our world and daily lives - but only for the better?**

This series explores the forefront of technological progress. From the transformative potential of quantum technology and AI innovations in medicine to the ethical dilemmas of drone warfare and deepfakes. This series navigates the promises and perils of cutting-edge advancements. We uncover the inner workings of groundbreaking technologies and their positive effects, while also addressing the potential downsides and threats they bring. Are the technologies of the future truly making our lives better, or do they come with unforeseen consequences?

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 Produced by: NZZ



### **1. Dreaming of a Better World: The Quantum Revolution**

The hype surrounding the quantum computer is fuelling the fantasy of a better world. It is supposed to reduce logistics costs by making freight transport more efficient. It could also find solutions for the energy storage of renewable energies. A Swiss start-up that produces artificial lungs wants to use quantum algorithms to conduct research even more efficiently in the future, cure cancer, and make animal experiments obsolete. Today, a private investor is already enabling start-ups to use quantum computers commercially. But the technology is only at the beginning and the potentials and dangers of these supercomputers are close together...

### **2. AI's Dark Side – How Women Become Victims of Deepfake Porn**

With the rapid technological advancements, virtually anyone with a target's photos can create and disseminate Deepfake-Porn using readily available apps. This documentary delves into the disturbing world of Deepfake pornography, where Kate Isaacs discovers an explicit video featuring herself and a stranger online. Millions of women worldwide are victims of Deepfake-Porn, created using artificial intelligence, posing severe real-world consequences, including damaged reputations, career setbacks, threats, depression, and even suicide. We talk with victims, AI experts, legal professionals, activists, and Deepfake-Porn producers, shedding light on the enormous real-life impact of virtual abuse and the near-impossibility of defending against it.

### **3. AI in Medicine – Will Algorithms Become the Better Doctors?**

Artificial intelligence is being used increasingly in medicine today. Algorithms recognize cancer patterns or can make prognoses for strokes - sometimes better than humans. They can predict complications, provide support during complicated operations or analyze nutrients in dishes based on a photo. But what is science fiction and what will become reality? In Bern, the Inselspital Bern and the university are breaking new ground. Computer scientists, biomedical engineers and doctors are working together to develop new AI technologies. Despite all the enthusiasm, however, there are also concerns and warnings of new risks in the application: How good are the AI systems really? And how can they be checked to avoid errors? Many systems are still like a black box; doctors often do not understand how the diagnoses are made. AI systems are like co-pilots. And doctors need to know how these systems work. But what will happen when artificial intelligence gets better and better? Will algorithms then decide on therapies alone? And what role will remain for doctors?

#### **4. Vertical Farming – The Future of Agriculture?**

Soils are depleted, groundwater sources are drying up, nitrates and pesticides are polluting the environment. The intensive cultivation methods of today's agriculture are reaching their limits. The world's population will grow by 25 percent by 2050 and all these people will need more healthy food. Vertical farming is supposed to be the solution. But is the market ready for high-tech vegetable factories? A vertical farm offers many advantages: The indoor system requires 95 percent less water, cultivation is pesticide-free and indoor farmers can grow 300 times more vegetables per square meter of factory space - vertically. However, the high-tech factories are struggling to establish themselves on the market.

#### **5. Nuclear Energy – The Solution for a Green Future?**

Is nuclear power essential to achieving this energy transition? To reach climate goals, electricity production around the globe will have to be largely carbon-free in just over ten years. Turkey and Poland are both nuclear power newcomers. Their idea is to simply replace existing coal-fired power plants with nuclear power plants. In Silicon Valley, the founder of Oklo, Jacob DeWitte, wants to reinvent nuclear power with his startup. He is receiving support from prominent people, like Sam Altman, the co-inventor of Chat-GPT, who believes that only nuclear power will provide us with enough electricity for the AI revolution. We explore which raw materials are needed for nuclear power and why, since the Ukraine war, the business with fuel elements is flourishing again in Europe. Russia plays once more a big role. The country is the world's biggest player in the nuclear power business. Does the West need to catch up in terms of nuclear power in order not to be dependent on Russia again in the future?

#### **6. Employed by an App – Freedom or Modern Slavery?**

Fernando García Pallás works as a food delivery driver in Madrid. Controlled by an algorithm, his next job is always just a click away. Working whenever and from wherever you want, having financial independence, and not having to deal with an annoying boss: Apps are the job markets of the modern age. In Europe alone, over 25 million people get their mini-jobs via gig economy platforms such as Uber, Deliveroo, Upwork, or Fiverr. Within the next three years, that number could nearly double. Tech companies promise a lot, but in reality, they deliver little. On the contrary, they often deliberately take advantage of the weakest members of society.

## **7. Vision of the Future: How AI is transforming the World for the Blind**

A new era of accessibility emerges as technology empowers the visually impaired. Twenty years ago, Switzerland enshrined equal opportunities for the visually impaired into law, sparking significant progress since then. Technology plays a crucial role in Bernarda's life as she tests a revolutionary AI device in Lausanne, allowing her to explore her surroundings independently. Josef Stöckli, who lost his sight due to a tumor, also understands the power of technology, which has become an indispensable companion in his daily life. The field of ophthalmology is on the brink of a revolution as well: an innovative diagnostic algorithm promises to assist doctors in analyzing retinal scans more effectively and detecting diseases early. While AI development is still in its infancy, and critical issues like data privacy remain to be addressed, this technological advancement brings immense hope. It paves the way for a future where blind and visually impaired people can lead even more independent lives.