**Can we Face Deepfake Fraud?**

**The abuse of deepfake in fraudulent campaigns has already affected Czechia and with the development of artificial intelligence, fake statements of politicians or fake pornographic content with the faces of celebrities can be expected to increase. However, the issue of deepfake videos or audio recordings is only marginally addressed by Czech science and research, and there is a lack of systematic support for deepfake research in the Czech Republic, according to the results of a study by the Technology Centre Prague.**

In the TC Spotlight initiative, analytical teams from the Strategic Studies Department of TC Prague assess current technological and societal topics in terms of their representation in Czech science and research, and the first area examined was synthetic multimedia content. Deepfake videos and voice cloning, where artificial intelligence is used to create fake recordings, became a prominent topic after 2016, when more powerful language models began to emerge. In Czechia, the issue of deepfake videos was most prominent in a scam campaign where an edited video featuring President Petr Pavel recommended investing in dubious financial products, with the quality of the video rated as very successful by experts. "Concerns about the mass use of fraudulent videos in the Czech Republic are growing, especially in connection with the next parliamentary elections," says Kristýna Meislová, an analyst at TC Prague.

Between 2019 and 2021, the number of patent applications for technologies related to the production and detection of deepfake videos will quadruple to 70 per year. The number of open access scientific publications has grown even faster, up to 1,000 articles per year, with around 300 publications per year in the prestigious Web of Science database. Czech scientists have contributed to 11 publications on the Web of Science related to deepfake in the period 2020-2023, according to an analysis by the Technology Centre Prague.

"The creation of video content using artificial intelligence also has a number of perfectly legitimate applications in filmmaking, art, education or advertising, so understanding technological and societal developments in this area is crucial. Czech science could contribute to the research of deepfake content, its detection and the establishment of appropriate regulation of tools and services," adds Kristýna Meislová.

In the Czech Results Information Register (RIV), the topic of deepfake appeared in only 8 results, of which only 3 were peer-reviewed articles. There are currently four major international research projects on deepfake within the Horizon Europe programme, but none of them involve Czech scientists. According to the Research, Development and Innovation Information System, no research projects on this topic will be supported by public funds in the Czech Republic until the end of 2023. Starting this year, the Ministry of the Interior is commissioning the "Tools to Combat Voice Deepfakes" project, which will evaluate people's ability to recognise voice deepfakes and look for ways to increase target users' security awareness in this area.

An analysis of prestigious technology media in the Anglo-Saxon world (see word cloud in the infographic) shows that the issue of deepfake videos covers a broader range of topics than just political campaign fraud, the spread of misinformation or generated sexual or pornographic content, but is also associated with social engineering crimes and the theft of corporate or banking data and other sensitive data. Faithful voice imitation and real-time voice generation have reached a high technological level at minimal cost and based on only short voice samples. Voice spoofing can be used in telephone calls, which can be fully automated and highly trustworthy thanks to artificial intelligence.

In the United States, audiovisual deepfake content is very topical in the 2024 election year, and there are efforts to regulate it legally. Deepfake videos have already featured prominently in this year's Indian elections, with politicians, celebrities and long-deceased personalities featuring in artificially generated videos. The proliferation of fake news, manipulated content and misinformation on social media platforms has challenged fact-checking efforts. On the other hand, the use of AI-generated content for the legitimate purpose of allowing politicians to better communicate with the public and build a positive emotional relationship with voters was very common.

The emergence of AI-generated political content poses an unprecedented challenge to democratic processes. It is imperative that robust regulations and oversight mechanisms are put in place to prevent the misuse of AI technologies. In addition, fact-checking initiatives need to be strengthened to combat misinformation. The importance of these trends cannot be overstated, as they pose a significant threat to the integrity of the electoral process and public trust in democratic institutions.

"Technological tools for detecting fakes and rules for labelling AI-generated content are essential in an era of improving technological means to ensure fair political competition, protect personality and defend against disinformation in hybrid conflicts," adds Kristýna Meislová.