Innovative system designed to find out if a voice recording is real or generated by artificial intelligence

29/07/2024

News

Researchers at the University of Granada, experts in conversational systems and speech and language processing technologies, have developed an extremely useful tool to combat disinformation and fake news

Researchers at the University of Granada (UGR), belonging to the Department of Software Engineering, have designed a pioneering system in the world that can discern whether a voice audio is real or is generated by Artificial Intelligence (AI) algorithms, a method of enormous utility to combat disinformation and fake news.

This work, carried out within the framework of the RTVE-UGR Chair, was presented this morning at a press conference held at the Royal Hospital of Granada, with the participation of UGR researchers Zoraida Callejas, David Griol and Daniel Calderón, experts in conversational systems and speech and language processing technologies, and the rector Pedro Mercado.

Currently, advances in the use of deep neural networks for audio synthesis are making it possible to obtain increasingly realistic synthetic voices (i.e., generated by AI). This has great advantages, as it makes it possible to provide more intelligible voices to automatic systems (e.g. text readers, virtual assistants, robots...), as well as to control their characteristics, making them more expressive and diverse (with applications for example in the production of multimedia content).

However, speech synthesis can also be used to create or manipulate audiorecordings for malicious purposes, such as impersonation in telephone scams or thegeneration of fake news.

Until now, audio has been less of a problem in newsrooms compared to other types of fake, such as photographs or videos. However, in the last two years it has been gaining ground, so there is a need for tools that help in the detection of fake audio and can serve journalists as a new source for news verification.

The research led by professors Zoraida Callejas and David Griol that has been presented this morning has been carried out in the context of the RTVE-UGR Chair, in which both researchers participate together with RTVE and the company Monoceros Labs.

The aforementioned lines of research have been applied in this case to the verification of audios to combat disinformation. We have generated a tool that integrates our own and third-party solutions to discern whether an audio is real or generated with artificial intelligence algorithms," explained the UGR researchers. One of the novelties introduced by this tool is that it not only integrates general models, but also specific models generated at the UGR for voices of personalities who are frequent targets of disinformation".

Not in vain, during the press conference the scientists have given as an example voices cloned using AI techniques for the conversion and voice cloning of Monoceros belonging to King Felipe VI; the president of the Government, Pedro Sánchez, or the vice-president Yolanda Díaz. "Our goal is not to generate these synthetic voices artificially, but to train our AI using these voices generated by us so that the system can identify whether a voice is false or not with high accuracy," stressed the UGR researchers.

Work is currently underway to go beyond verification and develop tools for journalists based on conversational AI, which provide interactivity, accessibility and personalization of news content.

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