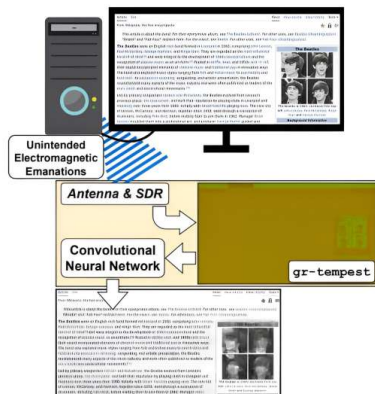


Researchers Have Found a Way to Eavesdrop Via HDMI Cables

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Courtesy of SynEvol
Credit: Universidad de la Republica Montevideo

Three computer security researchers at Uruguay's Universidad de la República Montevideo have discovered that listening in on an HDMI cable allows one to replicate words on a computer screen. On the arXiv preprint server, Santiago Fernández Emilio Martínez, Gabriel Varela, and Pablo Musé Federico Larroca have released a paper detailing their discoveries.

When CRT-based computer screens were first introduced, hackers quickly discovered that they could easily convert electromagnetic radiation emissions into images that displayed what was on another person's computer screen. Due to the far more sophisticated signaling involved in the switch to LED-based panels, which require HDMI connectors, hacking became much more challenging. The Uruguayan team's latest study has discovered that using AI to solve the issue makes it feasible.

The task entailed recording electromagnetic radiation coming from HDMI connections connected to computers. Subsequently, they used screen samples linked to radiation signals traveling via the computer's HDMI cable to train an AI system. The system's ability to interpret the words on a particular computer screen improved with time.

During testing, the system demonstrated a 70% accuracy rate in recreating text from an arbitrary computer screen. Enough, according to the research team, for the majority of people to understand the main ideas on a specific computer screen. They add that it is probably good enough to steal important information, passwords, and occasionally encrypted communications. After the text was decrypted, the researchers discovered that applying text recognition software on it would enhance their findings.

According to the experts, hackers have undoubtedly previously carried out comparable studies, therefore innocent individuals are probably already the subject of such screen-grabbing. They point out that all that would be required is technology that could intercept the electromagnetic radiation that HDMI cables—which are often found in cars and situated close to buildings—emit.

The team goes on to say that because of the skill set needed for this technique, most people are not vulnerable to such an attack. Rather, they argue that the likelihood of a government or business body being targeted is significantly higher.