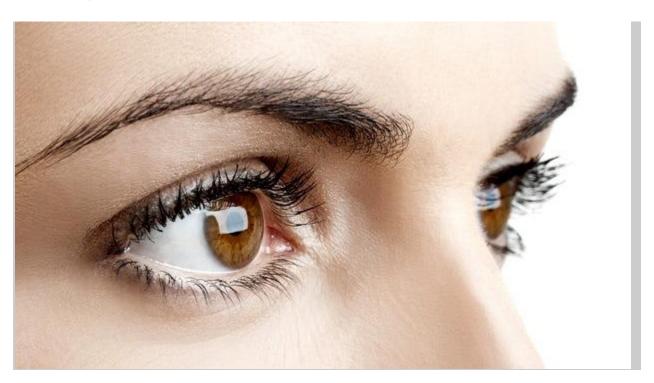# Computer outperforms humans at detecting lies, by watching the speaker's eyes

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An experimental system allows a computer to determine whether or not a human speaker is lying, by observing their eye movements (Photo via [Shutterstock](#))

If the movie *2001: A Space Odyssey* taught us anything, it's that computers know when we're telling a lie. While that may not actually be the case for most computers in real life, it *could* be if they're running a program created by scientists from the University at Buffalo. Building on a previous psychological study, the team produced software that allowed a computer to assess a speaker's eye movements, to determine whether or not they were telling the truth in a prerecorded conversation. It turns out that the computer was able to correctly able to spot their lies with 82.5% accuracy. According to the researchers, a trained human interrogator only manages a success rate of about 65%.

The project utilized 40 videotaped conversations culled from a pool of 132 used in the original psychological study, in which subjects chose whether or not to steal a cheque, and were then asked if they had done so. The selected videos represented a variety of skin colors, head poses and lighting conditions, plus some of them included potential visual obstructions, such as eyeglasses worn by the speakers.

In order for the computer to identify the tell-tale "lying eyes" of each person, it first needed a baseline example of their regular eye movements, as exhibited when they were telling the truth. This was accomplished by starting each interview with simple questions, that had obvious truthful answers, and observing the speakers' eyes. In particular, the program took note of their rate of blinking, and the frequency at which they shifted their gaze.

As the conversation moved on, the subjects were asked whether or not they had stolen the cheque. If their eye movement pattern remained the same, it was assumed they were telling the truth. If it changed, however, they were labelled as liars. While most of the speakers were caught out, a few were particularly good liars, and were able to keep their physiological responses (including their eye movements) under control.

The scientists now plan on further studies utilizing a larger database, and ultimately hope to develop a system that could be used alongside human interrogators.

"What we wanted to understand was whether there are signal changes emitted by people when they are lying, and can machines detect them?" stated assistant professor Ifeoma Nwogu. "The answer was yes, and yes."

Source: University at Buffalo

https://newatlas.com/computer-eye-movements-lie-detector/22013/

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