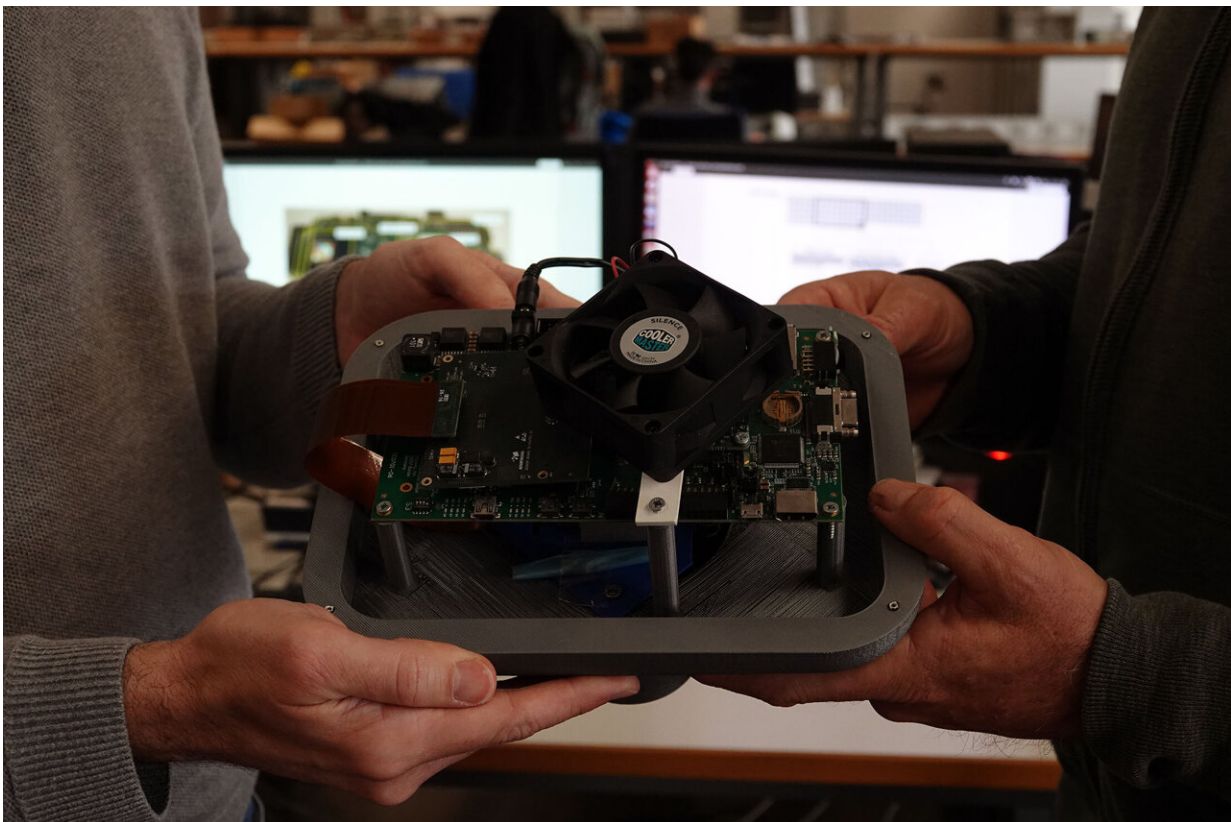


A novel eye detection system capable of capturing images in motion from a distance of two meters

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Credit: University of Malaga

Researchers of the Embedded Systems Engineering group of the Higher Technical School of Telecommunications Engineering of the University

of Malaga, specializing in artificial vision and assistive robotics, have designed a novel eye detection system that allows capturing clear iris images from a distance of two meters with no need for subjects to stop.

This is an important step in the development of non-invasive biometric identification systems based on [iris recognition](#) because it adds a greater processing capacity with lower energy consumption and, moreover, the physical size of the system has been reduced, becoming an embedded system with a single high-resolution camera instead of several cameras connected to their respective computers.

"Its main advantage is that it works while the person is in motion and from a distance of two meters, that is to say, it doesn't require the person to stop in front of the camera to be identified; instead, it is capable of capturing the iris while the person is walking," says the engineer of the UMA Adrián Romero, one of the authors of this study.

Likewise, the expert explains that the eye detection system developed is capable of processing more than 700 frames per second, although subsequent stages of filtering and evaluation reduced this rate to 88 frames per second. "It is important to note that previous system worked with only twenty, so the qualitative leap is enormous," adds Professor Antonio Bandera Rubio, member of the R&D&I group of the UMA.

Futuristic technology

The result is a state-of-the-art "smart" [camera](#) developed in Multi-Processor System-on-Chip (MPSoC) technology, with [new applications](#) in multiple fields such as security, justice or health.

The iris as a fingerprint

This paper has recently been published in the scientific journal *Expert Systems with Applications* and is part of an architecture for biometric identification based on iris recognition that, for more than a decade, has been developed with the company SHS Consultores pursuant to transfer agreements managed by the Research Results Transfer Office of the UMA.

Its commercial implementation is the next objective, seeking to turn the iris into the new fingerprint, thus facilitating security in access or seating capacity control points and always in spaces where surveillance is previously specified.

More information: Camilo A. Ruiz-Beltrán et al, Real-time embedded eye detection system, *Expert Systems with Applications* (2022). [DOI: 10.1016/j.eswa.2022.116505](https://doi.org/10.1016/j.eswa.2022.116505)

Provided by University of Malaga

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