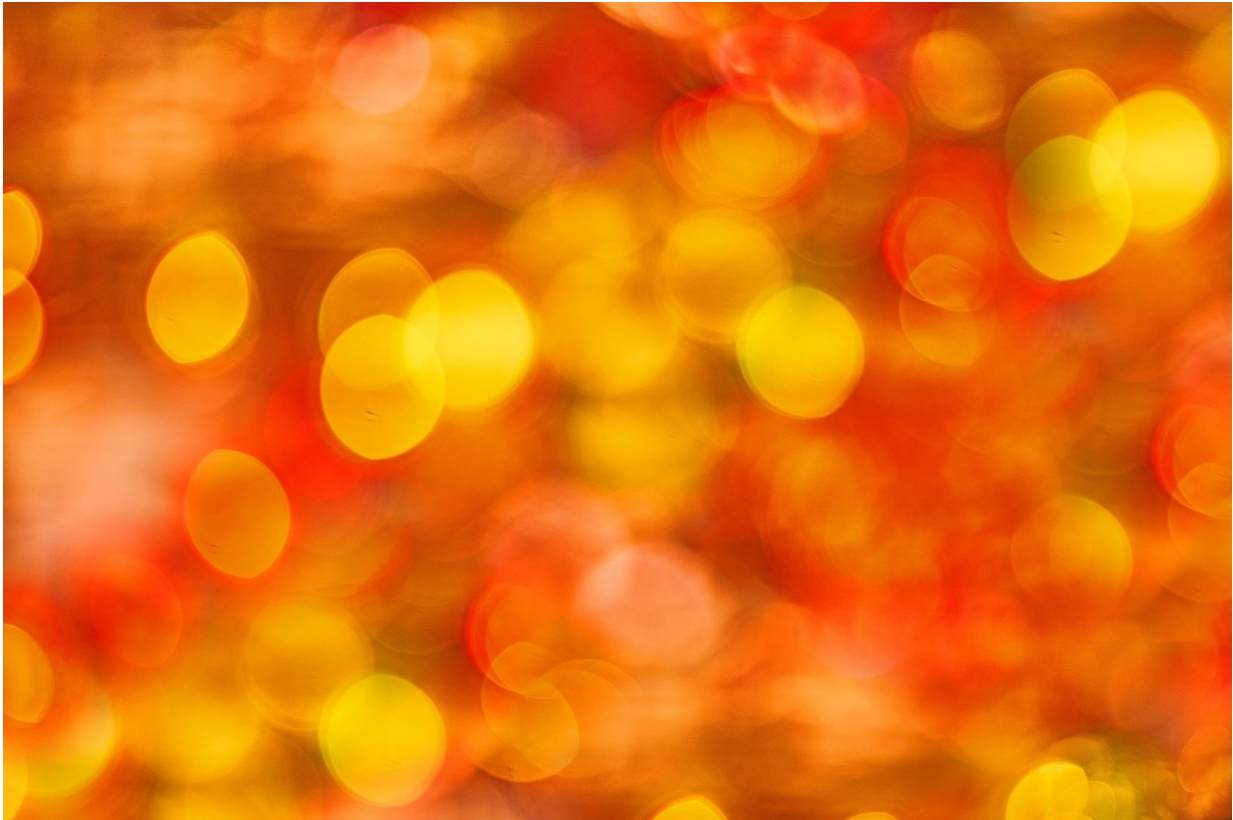


Early sepsis detection with infrared

August 13 2019, by David Bradley



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Sepsis is a major risk factor for patient death among those in intensive care not suffering from heart problems. In fact, it is the eleventh cause of death overall in the U.S.. It arises when infection causes a breakdown in the immune system leading to a major inflammatory response. Research published in the *International Journal of Data Mining and*

Bioinformatics suggests that infrared thermography could be used for the early detection of sepsis. Early detection is key to treating this condition and reducing the sepsis mortality rate.

Hasanain Al-Sadr, Mihail Popescu, and James Keller of the University of Missouri Columbia, U.S., explain that abnormal patterns of body temperature can reveal the earliest stages of sepsis. "We suggest using thermography as a non-invasive tool capable of continuously measuring body temperature patterns and detecting abnormalities," the team writes. They add that one of the odd patterns is temperature difference between body extremities and the patient's core temperature.

The team has now developed an automatic system that can calculate core versus extremity temperature differences based on a frontal and lateral infrared thermogram of the face. The measurements are determined for the inner and outer ear and tracking the tip of the nose by monitoring the position of the inner corner of a patient's eyes in the images. The [statistical methods](#) the researchers used can work successfully to detect sepsis almost irrespective of the angle of the head relative to the imager and if there are different backgrounds. The system works well in real-time, the team reports.

More information: Early sepsis recognition based on infrared thermography. *International Journal of Data Mining and Bioinformatics*. DOI: [10.1504/IJDMB.2019.101389](https://doi.org/10.1504/IJDMB.2019.101389)

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