Ultrasonic social distancing

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Social distancing has been a critical component of the world's response to the COVID-19 pandemic. The idea being that keeping physical apart from other people will reduce the risk of a person spreading the respiratory virus to someone else. It is just one component of our

response, which also includes wearing face coverings, frequent hand sanitisation, and obtaining a vaccine against the virus.

Such measures would not seem unfamiliar to past generations who lived through pandemics. However, the technology we have today that was simply unimaginable at the time of the 1918–1920 influenza pandemic means we can make our response even more effective. New research in the International Journal of Sensor Networks discusses the potential of ultrasonic sensors to help people keep a safe distance from others when social distancing is deemed necessary in a pandemic situation.

Mohit Ghai and Ruchi Gupta of the Department of Electrical and Electronics Engineering at ADGITM, IP University in Delhi, India, describe a small, portable sensor-alarm device based on an Arduino system. Arduino is an open-source hardware and software system that can be used to quickly build single-board microcontrollers and microcontroller kits with a variety of inexpensive applications. There is scope to add Wi-Fi capability and other networking functionality to a device too.

The team's Arduino device has an ultrasonic sensor that continuously probes the space around a person and is triggered when another person enters one's personal space within a pre-determined threshold distance set according to social distancing rules. The system is not dissimilar to the parking sensors with which many vehicles are fitted and so could give a timely indication to the user that they have moved too close to another person unwittingly or alert them when another person moves nearer to them in a shopping queue or other setting, for instance.

Given how often people misjudge distances between themselves and others especially in busy environments, a portable alarm system of this sort could be a boon to those hoping to ensure social distancing is maintained to help reduce the risk of spreading infection.

More information: Mohit Ghai et al, Ultrasonic sensor based social distancing device, *International Journal of Sensor Networks* (2021). DOI: 10.1504/IJSNET.2021.117227

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