UGM Lecturer Develops Body Temperature Measuring Devices With Face Scanner Feature

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The lecturer team of Electrical Engineering Study Program Faculty of Engineering (FT) UGM developed a body temperature measuring device using face scanner technology (thermal imaging).

"This tool will measure the thermal emission/heat emitted by the object, namely humans in front of the machine. In addition to the body temperature measuring feature, the device also has a face detection feature and a mask use feature," explained Dr. Igi Ardiyanto as a team of thermal imaging developers on Thursday (6/25).

Addyn Suwastono, M. Eng., And Dr. Eka Firmansyah have developed this tool which can make people easier to detect the temperature of the human body without having to touch or get closer to the object physically. This tool can detect body temperature within a range of up to 2 meters in front of the device.

Igi said that in general, the use of thermal scanners must be brought close to the face of objects in a very close distance. Meanwhile, the community remains to maintain a minimum length of 1 meter to prevent the spread of Covid-19. Starting from that condition, he and his team tried to innovate a body temperature measuring device that could detect temperatures within safe limits, keeping a distance to minimize transmission of the virus.
Thermal imaging is composed of several components, namely the thermal camera and PC embedders, speakers and gates. This tool works by measuring body temperature based on the object's thermal radiation, scanning the face, and using masks. Furthermore, the embedded PC will process the data, and the final result will be in the form of the sound coming out from speakers.

"So, later, the output will be in the form of sound. For example, sorry, if your body temperature exceeds the normal limit. The sound of "access received, please enter and open the gate" will come out if it meets all the criteria.

He added that thermal imaging equipped with a camera with a resolution of 160 pixels so that it allows accurately and quickly in measuring body temperature. Igi explained that people could set the device not only to recognize faces, but this tool can also detect the use of masks. If the detected object is not using a mask, the feature will immediately deny access to enter the room.

According to Igi, the development of this tool is preparation for entering a New Normal regulation, especially at the UGM campus. With this tool, it aims to help in measuring body temperature as part of efforts to prevent Covid-19 transmission in the campus environment. As is known the use of thermal gun has become a procedure for measuring the body temperature of people who will enter a room.

The prototype has developed in early June 2020. In fact, the Department of Electrical Engineering and Information Technology (DTETI) of UGM has applied this tool. There is a plan that several points at UGM will also use this tool.

"Currently, we are in the process of making five more units. The obstacle is that there are components that are very difficult to obtain in large numbers, namely thermal cameras which are currently sought after by various parties," he said.

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