Handheld Diagnostic Device: Non-Invasive, Non-Contact Device with Multiple Sensors (18006)

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Technology description

University of Louisville researchers have developed a functioning prototype of a multi-sensor handheld device for use in several diagnostic applications.

Handheld Diagnostic Device (18006)

Technology

Modern medicine increasingly demands simpler, faster, and easier methods of diagnosis, that minimize patient discomfort.

To meet this need, University of Louisville researchers have developed a functioning prototype of a multi-sensor handheld device for use in several diagnostic applications.

The device allows users to acquire images/information from multiple specialized cameras and other sensors, in a way that’ s non-invasive and non-contact.

Today, professionals might need two separate devices for 3-D reconstruction and thermal sensing, and devices with both are bulky and require expensive optical equipment and high processing.

That is thanks to a small cluster of embedded systems and the use of techniques from high-performance computing to process the information.

The product has various potential applications, including the following:

Early detection and/or diagnosis of pressure ulcers, burns, and skin cancer;

Anthropometric imaging for identification purposes, such as facial recognition;

Obtaining a 3-D reconstruction of a particular space to access architectural measurements;

Checking product quality;
And improves process control.

Application area

All

Advantages

Non-invasive and non-contact;
Highly mobile;
Both 3-D imaging and thermal sensing capabilities;
Includes touch screen with convenient graphical user interface;
Predicted to be manufactured at a lower cost.

Institution

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