TECHNOLOGY

An Easy-to-Deploy Temporal Thermographic Data Collection and Analysis System

OVERVIEW

Buildings in the United States consume a significant amount of energy and release an increasing amount of CO_2. Accordingly, tools and techniques have been developed to determine where energy efficiency in buildings can be improved. One such technique is thermography, where auditors determine energy inefficiency using a thermal camera that shows surface temperatures. However, the effectiveness of this technique relies on the interpretation of the thermal images, which can be ambiguous and subjective.

Researchers at the University of Maryland have developed a method using temporal thermography that reduces the ambiguity and subjectivity of the current method. Data are collected using a sensor kit that consists of a thermal camera, a smartphone, and a Raspberry Pi. Thermal images and humidity, air temperature, and motion readings are taken over a user-specified schedule. The data are then analyzed with a visualization tool. Users can then interact with the images and see how thermal patterns change over time. This provides clarity on whether or not an anomalous pattern on the thermal image indicates energy inefficiency.

APPLICATIONS

· Determining energy efficiency in buildings

ADVANTAGES

· Reduces ambiguity and subjectivity of current techniques

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Additional Information

INSTITUTION

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PATENT STATUS

Pending

LICENSE STATUS

Contact OTC for licensing information

CATEGORIES

- Software + Algorithm

- Information Technology

EXTERNAL RESOURCES

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