

**Crowdsourcing an Infrared Street
View with the SmartIR App**

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ENERGY INNOVATION FORUM

COMPANY ORIGINS

Who are we?

A group of researchers, developers, and educators working on engineering computation and education

What problem are we trying to solve?

People are unaware of energy waste in their homes or communities as heat transfer across the building envelope is often unnoticeable—until it is revealed by an IR camera. Unfortunately, large-scale IR mapping projects have all failed commercially.



Energy efficiency is the fifth fuel!



MASSACHUSETTS
CLEAN ENERGY
CENTER



UMASS
LOWELL

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KEY PRODUCTS/TECHNOLOGIES

A business model based on crowdsourcing

- The SmartIR (pronounced as “smarter”) app that integrates infrared thermography, smartphone technologies, context awareness, and cloud computing
- A crowdsourcing model to create the Infrared Street View—an IR version of the Google Street View—based on integrating STEM education and citizen science

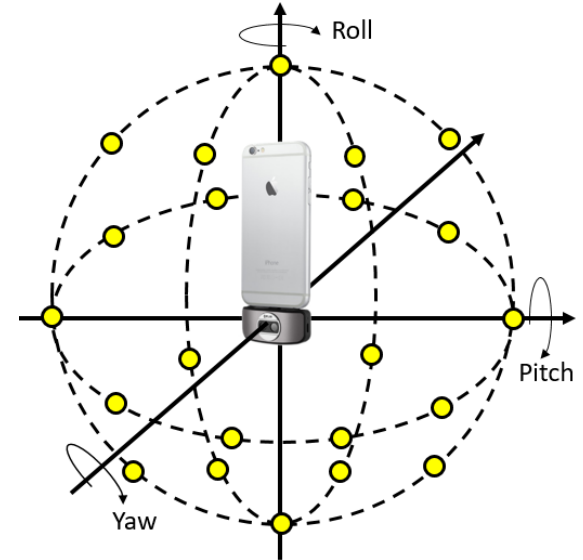


Image sphere or dome for panoramic thermography

Students learn science concepts in classrooms with IR cameras.

Students use IR cameras to scan their own houses, schools, or streets.

Students contribute IR images to the Infrared Street View (with permission).

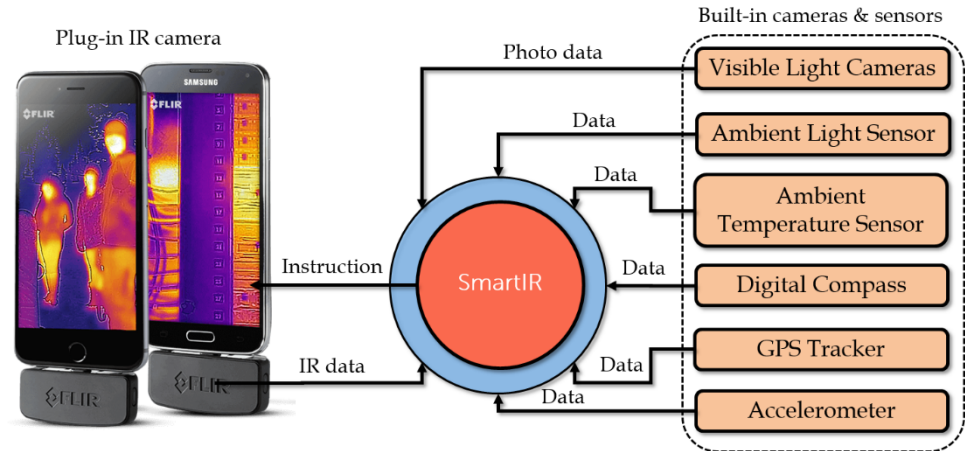
There is no better tool for teaching heat transfer than an IR camera!

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KEY PRODUCTS/TECHNOLOGIES

R&D plan in the next two years

Artificial intelligence to guide image collection and assure data quality based on mining sensor data and using computer vision



Virtual infrared reality (VIR) to create unforgettable viewer experiences and attract public attentions on the Web

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COMMERCIAL IMPACT

What will be the impact of the technology once it is commercialized?

- Real estates (infrared documentation of conditions)
- Energy efficiency companies (customer acquisition)
- Governmental surveys (“temperature web” data aggregation)
- STEM education (inquiry-based, project-based learning)



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NEXT STEPS AND NEEDS

What are we looking for?

- Funders
- Partners
- Developers
- Teachers

Current funder:

- National Science Foundation

Current partners:

- FLIR Systems
- CLEAResult

