Collaborative Sensing: An Approach for Immediately Scalable Sensing in Buildings

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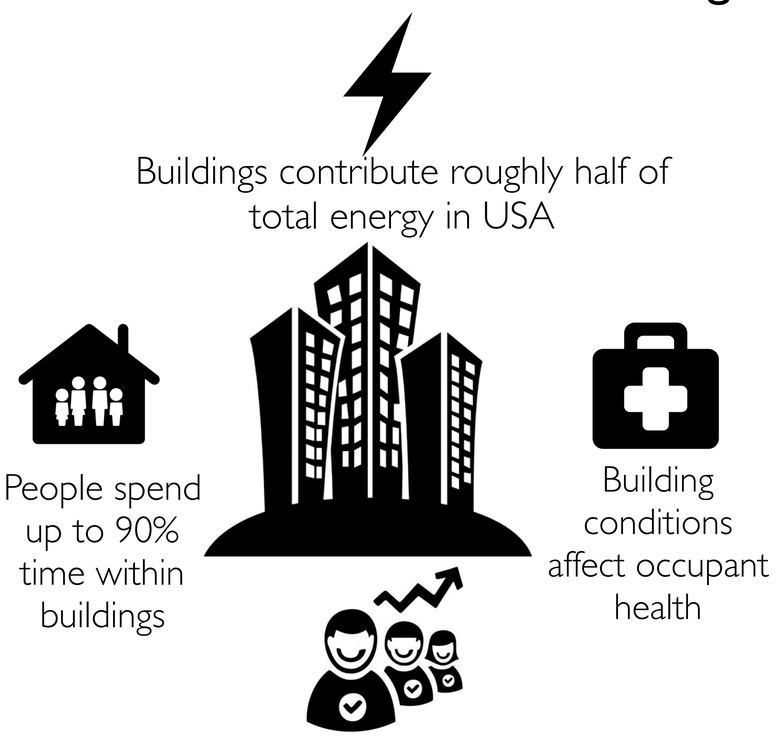
Motivation for Smart Buildings



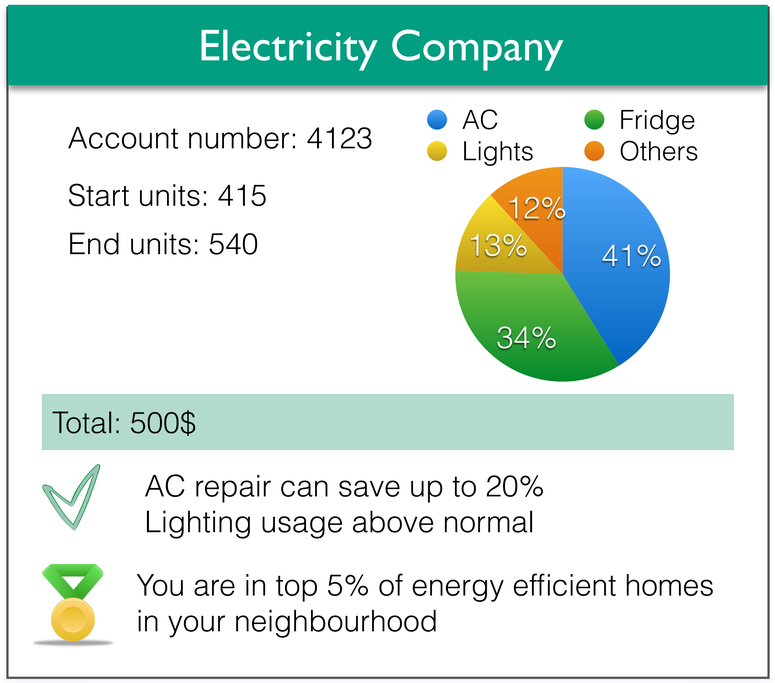
The Billion Building Challenge

"To enable smart building functionality for a billion buildings across the globe, including homes, apartment buildings, office buildings, restaurants, and hotels."

Current State

Buildings not extensively instrumented:

Example Application: Energy Breakdown



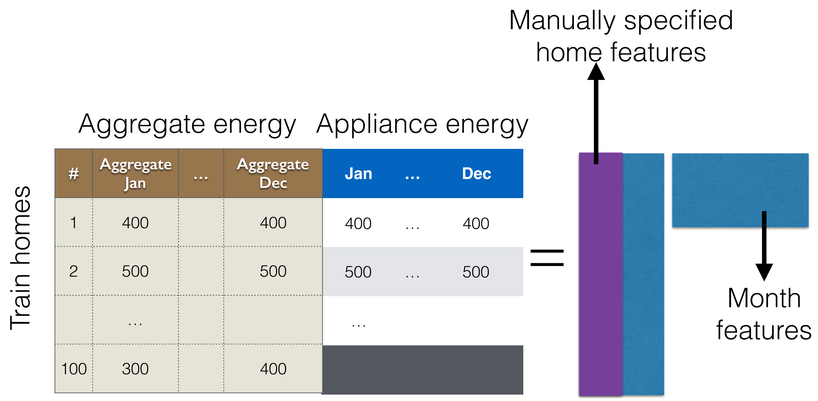
Energy breakdown can help occupants save up to 15% energy

Related Work

Plug load monitor | Circuit level monitor | Smart meter

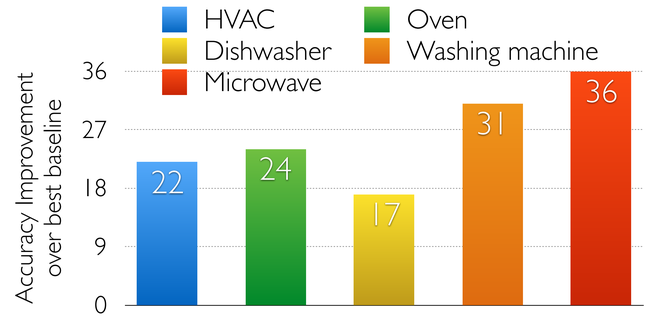
Existing solutions for energy breakdown require sensors in each home

Approach



Reconstruct the sensor data of one building based on sensor data collected in other buildings

Results



Our approach is up to 36% more accurate than the state-of-art

Web Application for 60M Homes