Breakthrough: Enhancing Privacy in Smart Buildings and Homes

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- CNS-1505422

Project Description

CPS sensor and IoT data leak private information about users

Our Focus: Preserve privacy in energy data…

- …but allow flexible energy monitoring and control
- Identify threats and develop privacy-preserving methods

Growing Problem: ~70 million "smart" electric meters in U.S.

- Monitoring also part of many other IoT products
- Over 50% of household meters and growing

Companies actively developing energy analytics methods

- Smart homes will increasingly leak private information
- **Examples:** When are you home? What brand of TV do you own? Where do you live?

Interesting Findings

Energy data embeds detailed location information

- Locations have unique **solar** and **weather** signatures
- Can often extract highly accurate location – down to a specific home

Must reconsider current notions of anonymity in sensor data

- Inform evolving policies on handling energy data and providing to 3rd parties
- Current policies and prior research **do not** preserve anonymity