Analyzing Information Leak in Smart Homes

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Challenge:

- Can IoT devices intrinsically leak sensitive information about their users and surroundings?

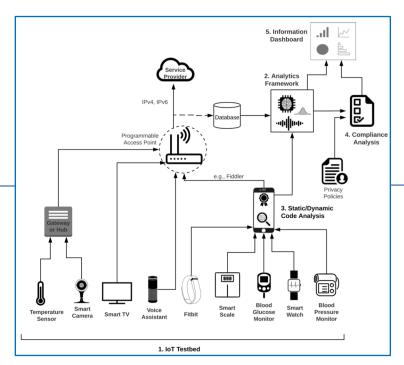- What end-points do IoT devices interact with and why?

Solution:

- Flow-level analysis to infer higher-order user activities

- Packet-level analysis of IoT data streams

- Static and dynamic analysis of IoT Apps

Framework for collecting network-level and application-level data from household IoT devices.

Scientific Impact:

- Develop analytic frameworks to detect security and privacy threats imposed by emerging IoT devices

- Foster the design of new privacy-enhancing technologies for IoT

Broader Impact:

- Promote awareness through information dashboard

- Initiate dialogues between industrial partners for vulnerable devices

- Integrate research into class curriculum through course projects