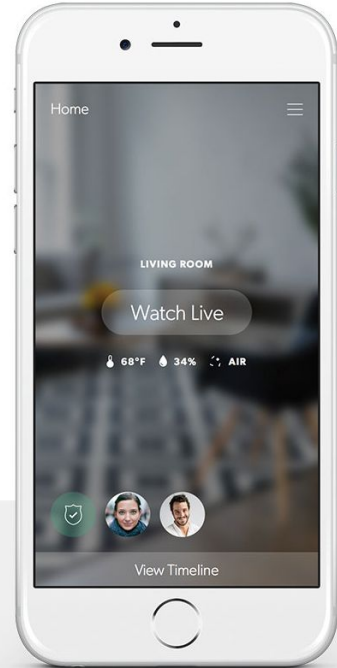


Canary

Home security for every home.

The perfect security system for every home.

Meet Canary. The all-in-one home security system you control from your phone. It's built to learn and sends intelligent alerts with HD video and audio directly to your phone.



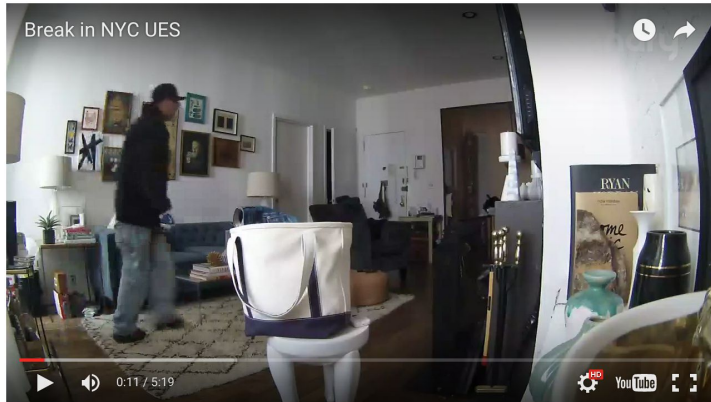
Canary Security User Story

“I’m away from home. Something happens at home. I get an alert on my mobile device. I see what is going on in the alert or by watching live in the app. I sound the siren and/or call the local police.”

Canary in action : burglaries happen



Canary in action : all the time



facebook.com/canary.is twitter.com/canary for more ...

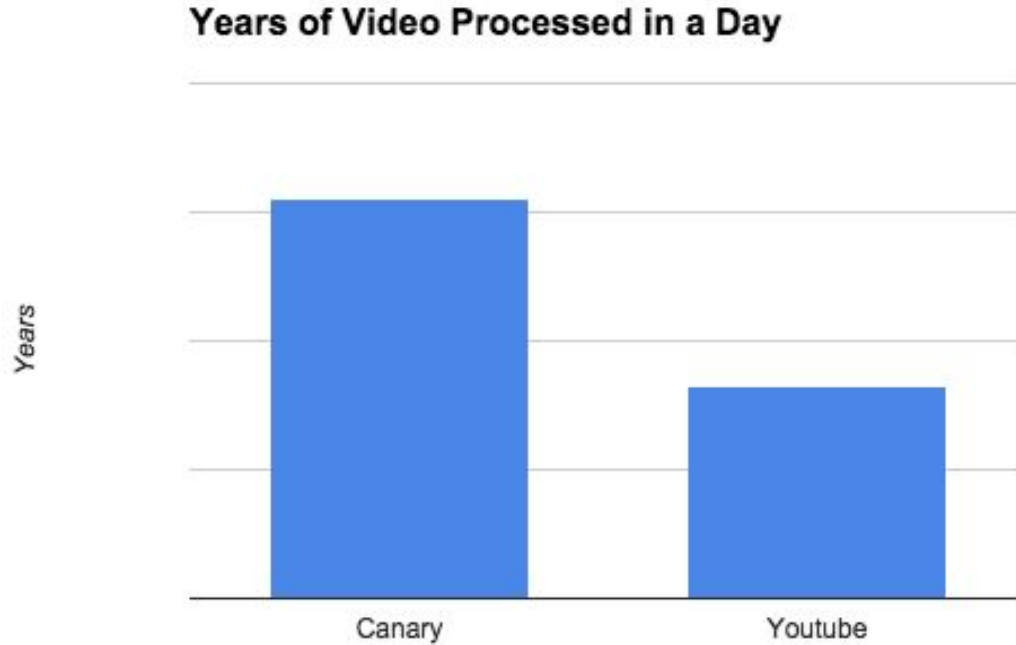
Canary Security User Story : Detection 24x7

We are monitoring all homes 24x7 except when in 'Privacy' mode

We alert a tiny fraction of the time

In fact false alerts are #1 reason people stop using security services

Production Data - Volume of Video (Nov. 2015 numbers)



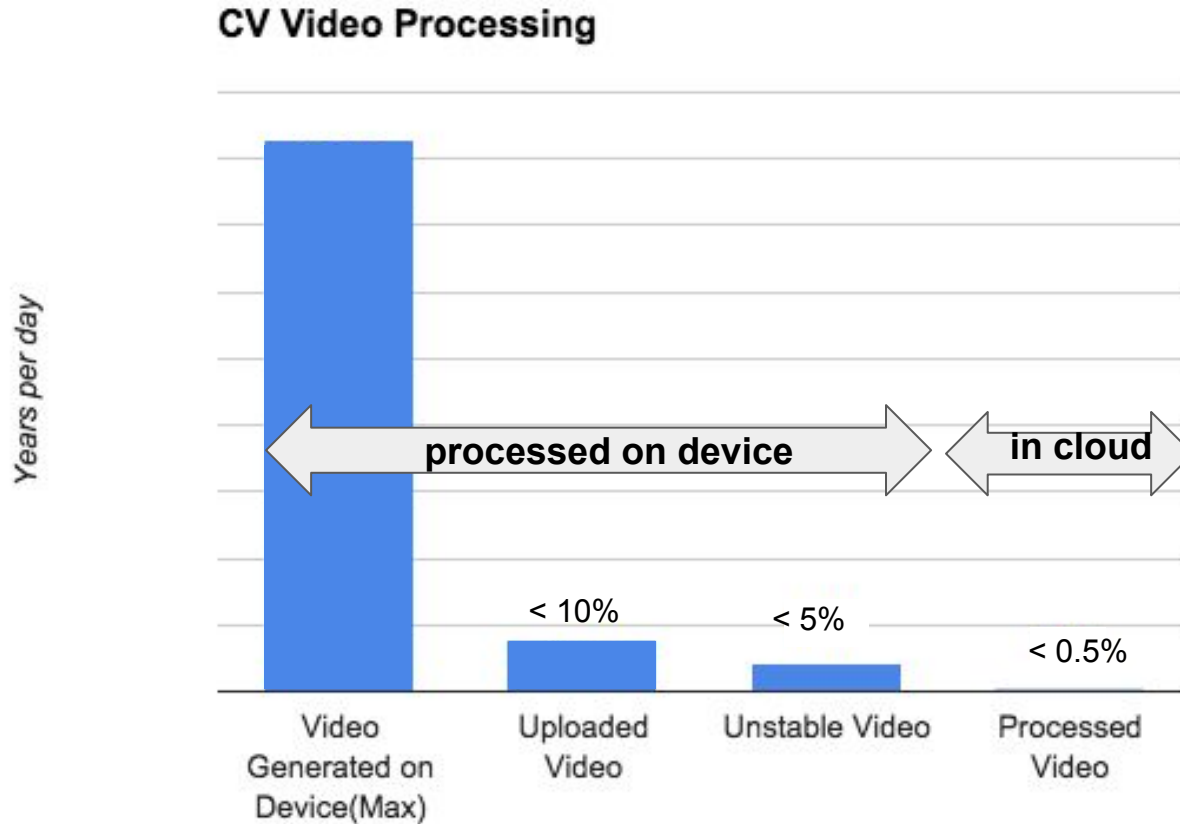
Canary Security User Story : Cost

Offered to all users on free plan

This is not a broadcast model where we can amortize transcoding costs over multiple viewing.

We deliver video 1:1 not 1:many

Production Data - Breakdown (the Processing Funnel)



On device processing

400-1000+ independent adaptive detectors.

Mathematically sound.

Initial sensitivity is automatically and individually set.

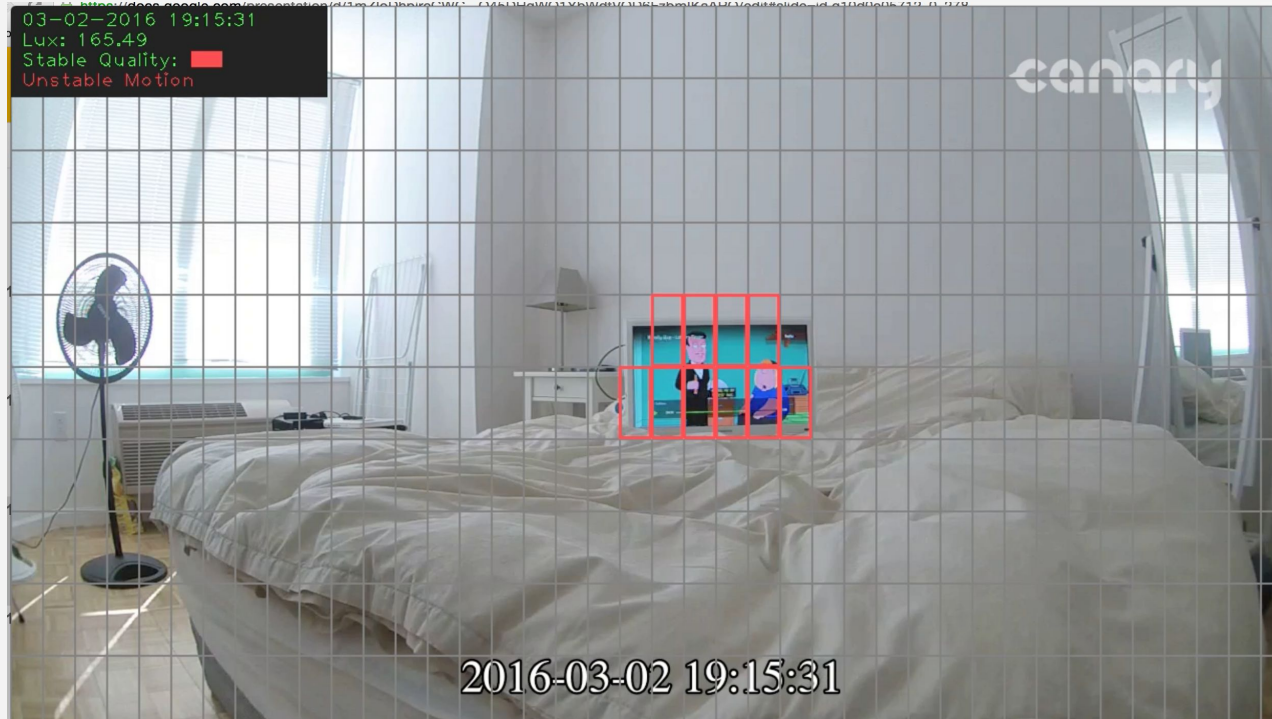
Significantly more sensitive than any PIR detector on market

Will not fire for no-reason, but requires additional filtering on the cloud

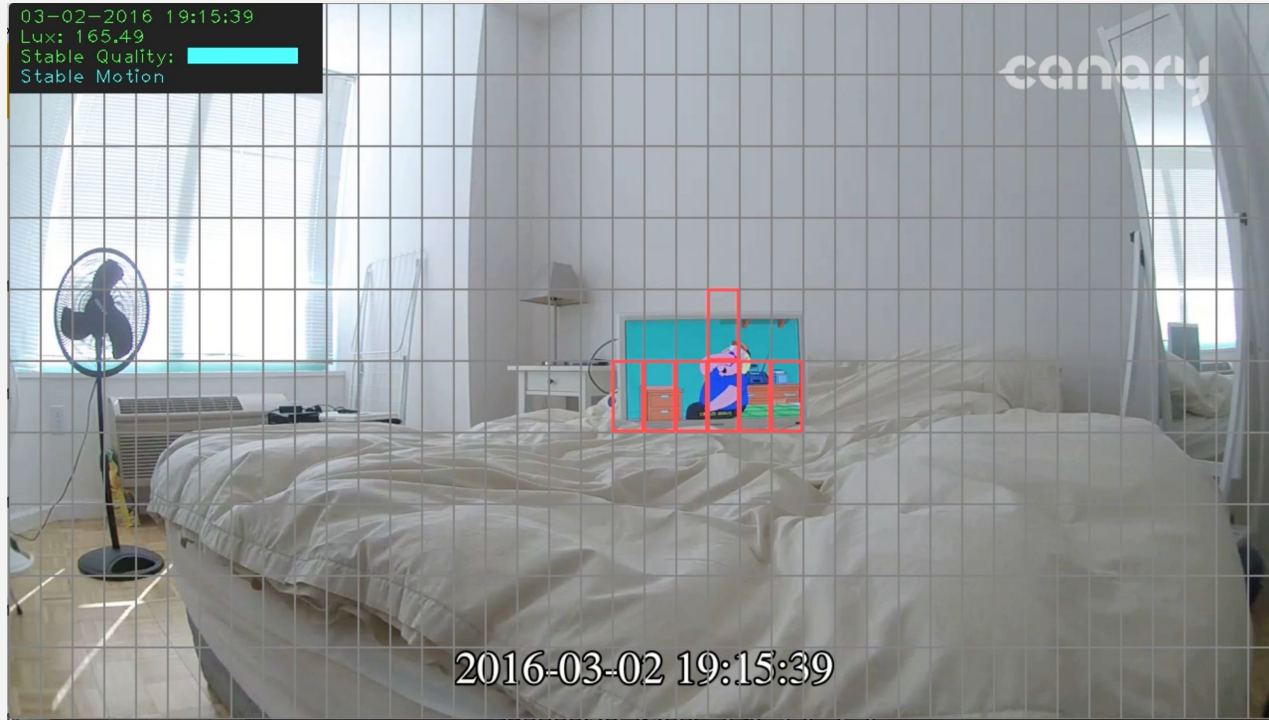
On Device : 400 adaptive regions



On Device : Motion Detection



On Device : Stable Localized Motion Detection



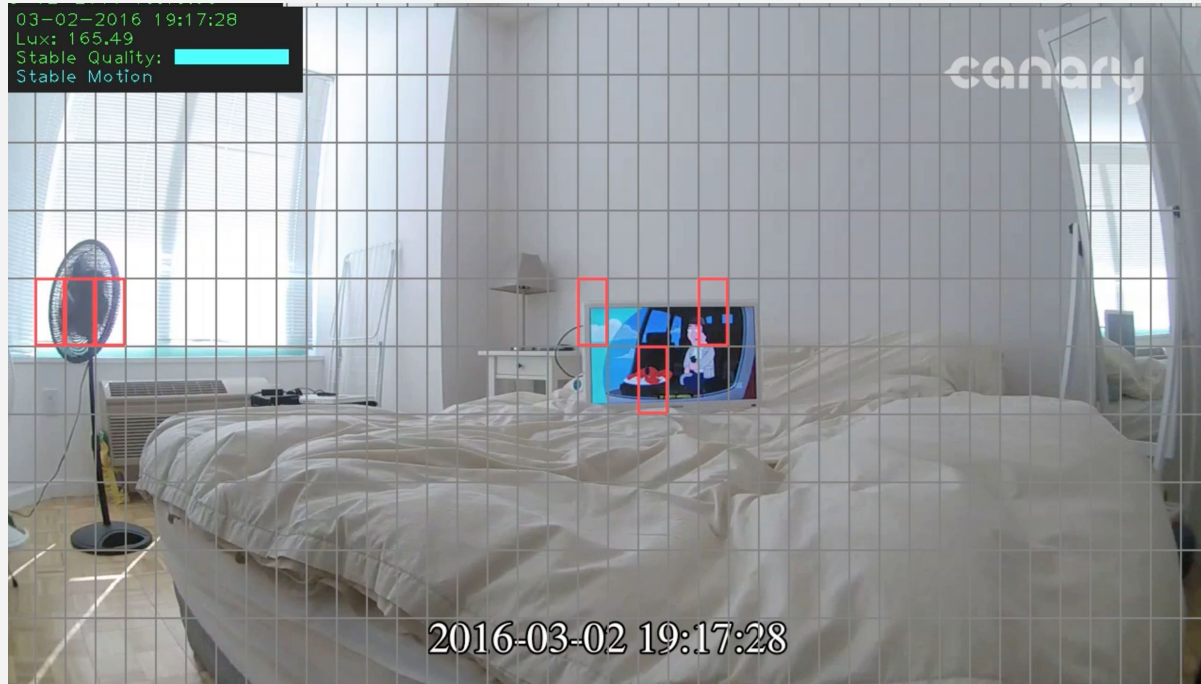
On Device : Stable Localized Motion Detection



On Device : un-Stable non-Localized Motion



On Device : un-Stable non-Localized Motion



On Device : Stable Localized Motion Detection



In Cloud : Classifier scores over region of interest

We don't want to notify on all unstable motions -- this would produce a large percentage of false alarms (and did for the first few months after launch)

We developed a system for detecting background (sunlight, reflections, auto-exposure changes) works well -- still some edge cases

Detection is a hard ROC curve 1 in 10000 with enough data is still a lot of false alarms.

In Cloud : Classifier scores over region of interest



In Cloud : Classifier scores over region of interest



In Cloud : Classifier scores over region of interest



In Cloud : Classifier scores over region of interest

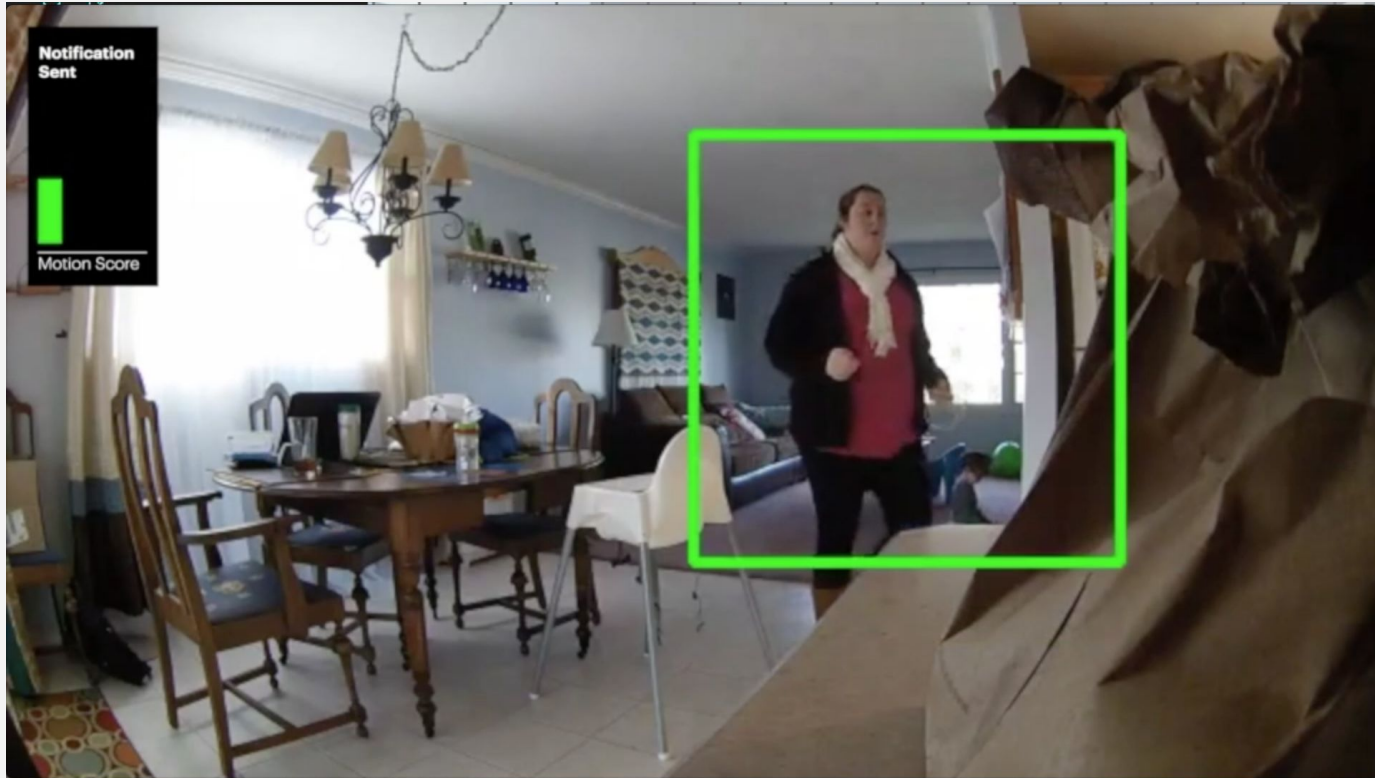
We want to differentiate between pets and people and eventually between individuals (works in progress)

We are collecting a large training set and will be deploying continual improvements of improved detection to production.

In Cloud : Classifier scores over region of interest



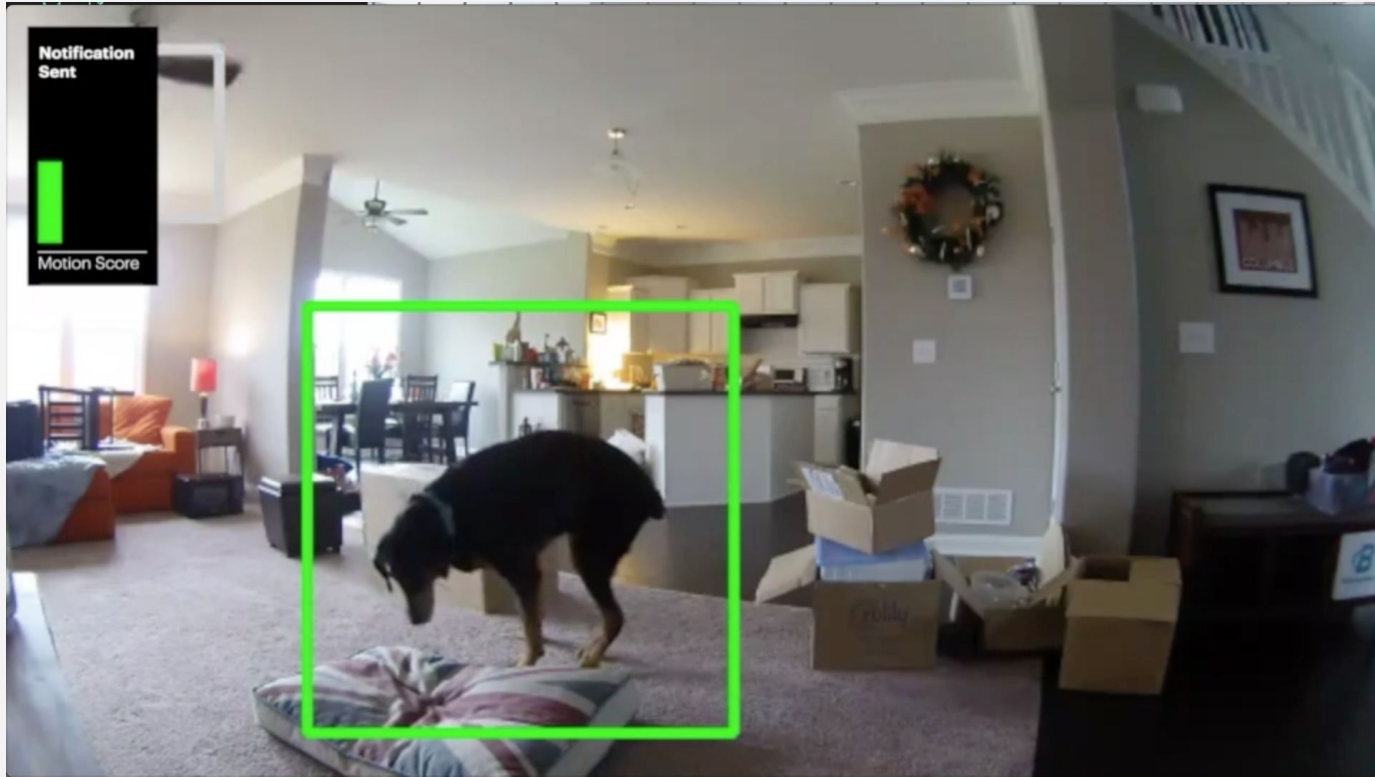
In Cloud : Classifier scores over region of interest



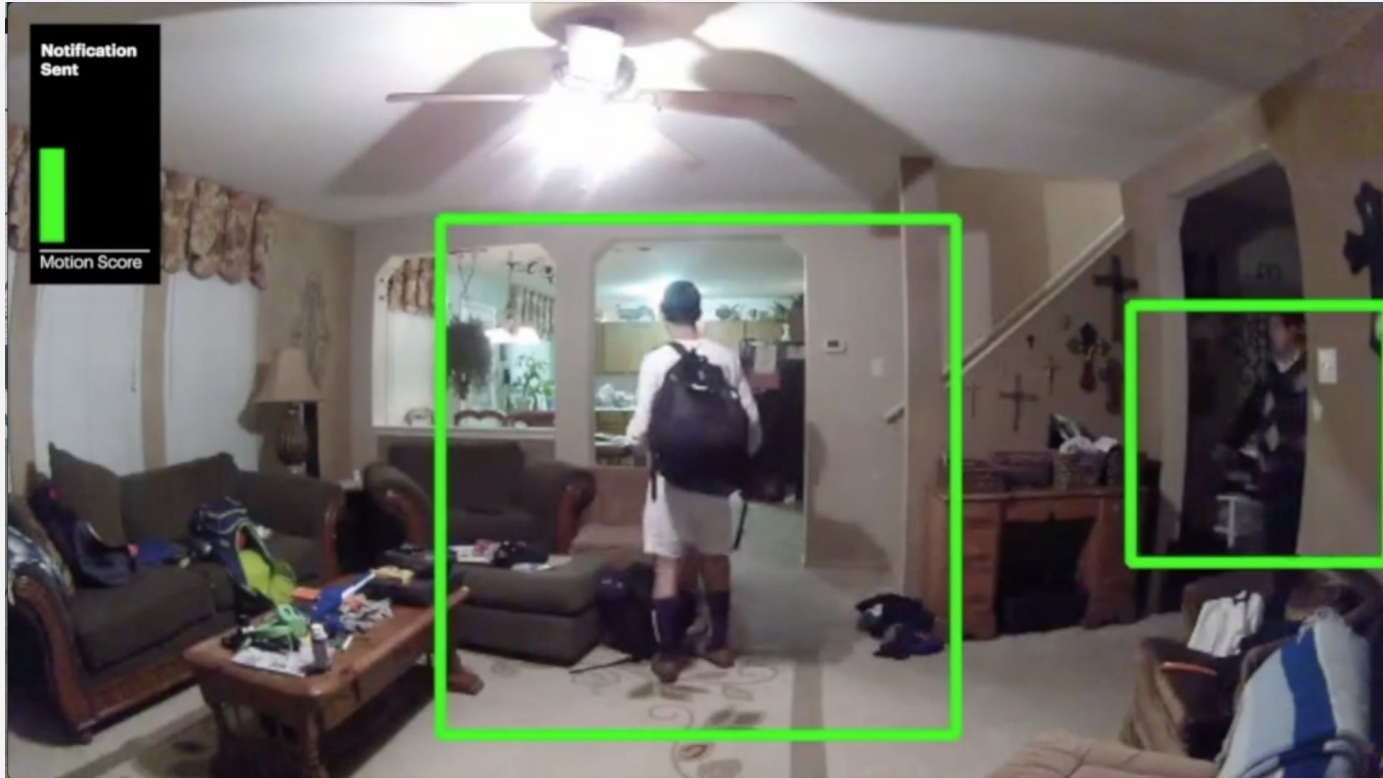
In Cloud : Classifier scores over region of interest



In Cloud : Classifier scores over region of interest



In Cloud : Classifier scores over region of interest



In Cloud : Classifier scores over region of interest



thanks !