

Video911

Turadg Aleahmad

Scenario 1

- You're walking down 4th street
- You notice a menacing figure following you
- She demands your wallet



- You give it to her
- End of story

Scenario 2

- You're walking down 4th street
- You notice a menacing figure following you
- You open your mobile phone and activate Video911

- He tries to steal your software
- You inform him he is live on camera being transmitted to the police
- He's already in trouble with the Justice Department so he leaves you alone



Motivation

- Four things proliferating:
 1. Guns
 2. Surveillance cameras
 3. Fast wireless
 4. Camera-endowed mobile phones

Now

- Guns increase likelihood of violence
- Ubiquitous surveillance erodes civil liberties (and doesn't work so well)
- Then what?

With Video911

- Strictly defensive
- More “Little Brother” than Big Brother

Overview

- User streams scene to secure location
- Operators there monitor the situation
- If the user is harmed, the operator is alerted and the device continues to transmit

Prototype

- JMF applications
- RMI messaging
- H.263 codec (RFC2190, RFC2429)
- RTP transmission (RFC1889, RFC2198)

- Let's see it

Evaluation

- Simple idea
- Open protocols
- Bandwidth (PCS Vision: 70, 3G: 384)
- Infrastructure

Future

- SOAP RPC
- Audio channel
- Switchboard interface and scalability
- GPS positioning
- PKS secure channel (auth + crypt, CA)
- Server-side face matching
- Client-side face optimization, Infrared
- Privacy issues (eg. scrambling, expiring)