Pocket Security:
Smartphone Cybercrime in the Wild

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https://www.pocket-security.org/

RESEARCH CHALLENGE

How do we prevent smartphone-enabled cybercrime in the real world?

- A thief steals a phone from a restaurant tabletop
- A user installs spyware accidentally because of real-world distraction

Online and offline routine activities

Personality traits and self-regulation

Social and physical context

Activity sensors

MADCAP

EXPANDING SOCIAL SCIENCE

Do existing psychological, social, and criminological theories apply to mobile cybercrime?

- Routine activities
- Self-regulation
- "Broken windows"
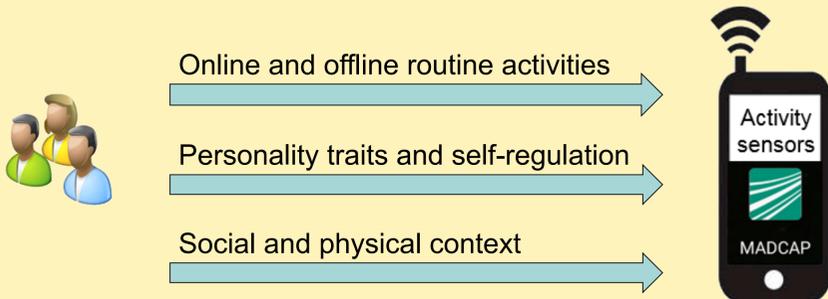
LEARNING FROM THE REAL WORLD AT SCALE

- Android app to capture user behavior and location data
- Case study with 160 participants
- Preservation of users' privacy
- Observation of user response to security alerts

Environmental data

App usage

MADCAP

Roll

Pitch

Azimuth

MADCAP Analysis Platform

Where is User X texting?

Other
store
moving_company
grocery_or_supermarket
car_repair
food
restaurant
bar
general_contractor
home

0 20 40 60 80 100 120 140

User A   User B

Show last Locations   show Markermap
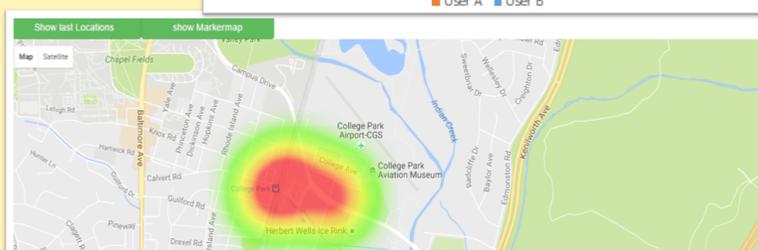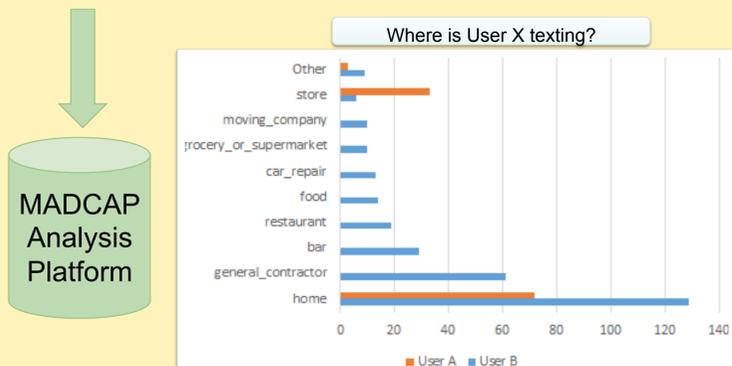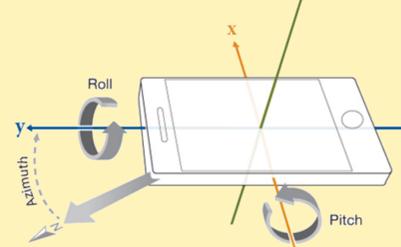
PREVENTING RISKY BEHAVIOR

- Apply machine learning to mine patterns of risky behavior
- Implement security measures to observe and deter risky behavior

Interested in meeting the PIs? Attach post-it note below!

PS

National Science Foundation
WHERE DISCOVERIES BEGIN

UNIVERSITY OF MARYLAND

Fraunhofer USA