Account Security Interfaces

Account Security Interfaces

- Display account activity

  - Devices, locations, IP addresses

- Useful in identifying compromises

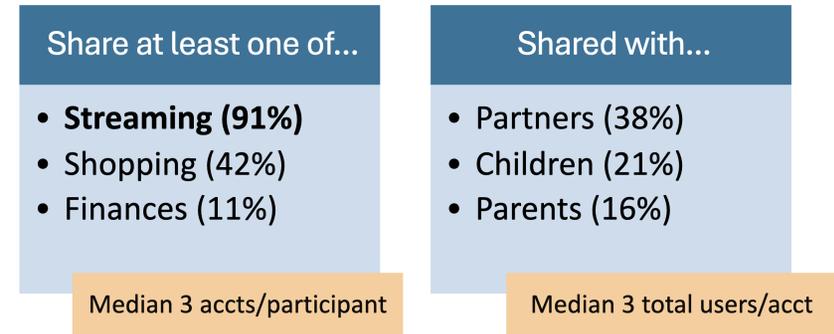- An essential tool during intimate partner violence cases

Paper goals

- Examine the role of ASIs in IPV

  - Look through transcripts of clinical tech assistance

- Understand usability pitfalls of ASIs

- Evaluate how easy these are to spoof

IPV and ASIs

- Device sharing common in intimate relationships

- ASIs can be used to notice

  - When ex-partner has access to device

  - Patterns of unwanted usage / tracking

- ASIs can at the same time be used by ex-partner to track!

RQ0: What accounts do people share?

Share at least one of...	Shared with...
• **Streaming (91%)** • Shopping (42%) • Finances (11%)	• Partners (38%) • Children (21%) • Parents (16%)
Median 3 accts/participant	Median 3 total users/acct

Moh, Yang, Malkin, Mazurek, SOUPS'24

Usability Issues

- Hard to understand details

  - Complicated mapping to devices

  - Confusing terminology

  - Coarse-grained location

Access Type [?] (Browser, mobile, etc.)	Location (IP address) [?]
Browser	United States (IL) (140.141.216.6)

Visit Security Checkup for more details

Recent activity:

| Access Type [?] (Browser, mobile, POP3, etc.)	Location (IP address) [?]	Date/Time (Displayed in your time zone)
Browser (Safari) Show details	United States (IL) (140.141.216.6)	7:19 am (0 minutes ago)

Browser (Chrome) Hide details
    "Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7)
    AppleWebKit/537.36 (KHTML, like Gecko) Chrome/143.0.0.0
    Safari/537.36,gzip(gfe),gzip(gfe)"
	* United States (IL)
	(140.141.216.6)
		7:19 am (0
		minutes ago)

Authorized Application (445112211283-
8hj5uor2tp387i59rq1caep2rr5lnkcj.apps.googleusercontent.com)
Hide details
    OAuth Domain Name:
    445112211283-
    8hj5uor2tp387i59rq1caep2rr5lnkcj.apps.googleusercontent.com
    Manage Account Access
	United States (IL)
	(140.141.216.6)
		7:12 am (6
		minutes ago)

Browser (Safari) Show details	United States (IL) (140.141.216.6)	7:00 am (19 minutes ago)
Browser	United States (IL) (140.141.216.6)	6:44 am (35 minutes ago)
Browser	United States (IL) (140.141.216.6)	6:44 am (35 minutes ago)
Authorized Application () Show details	United States (IL) (140.141.216.6)	6:26 am (52 minutes ago)
Authorized Application () Show details	United States (IL) (140.141.216.6)	6:18 am (1 hour ago)
Mobile	United States (IL) (140.141.216.6)	8:40 pm (10 hours ago)
Authorized Application () Show details	United States (IL) (140.141.216.6)	Feb 4 (13 hours ago)

Device Spoofing

- Interested in *non-expert* spoofing approaches

  - Use VPN to spoof location

  - Change browser settings to spoof device type

  - Change system time

| Service	Account Security Interface (ASI)	Spoofability					
		Device Model	Operating System	Browser	Location	Date	Time
Google	Recent Security Activity	●	n/a	n/a	×	○	○
	Your Devices	●	●	●	×	○	○
	Security Checkup	●	●	●	×	○	○
	Email login notifications	●	n/a	n/a	n/a	n/a	n/a
	Find Your Phone	●	n/a	n/a	×	○	○
Facebook	Where you're logged in	n/a	●	●	●	○	○
	Authorized Logins	●	●	●	●	○	○
	Recognized Devices	●	●	●	●	○	◐
	Logins and Logouts	n/a	n/a	n/a	●	○	○
	Active Sessions	●	●	●	●	○	◐
	Login Alerts (email & in-app)	n/a	●	●	●	○	○
Apple	Devices	○	○	n/a	n/a	n/a	n/a
	Email Notifications	n/a	n/a	n/a	n/a	○	○
	Login Push Notifications	n/a	n/a	n/a	●	n/a	n/a
WhatsApp	Linked Devices	n/a	●	●	n/a	○	○

Response

- IPV: Important context for security research

- Combination of usability and technical examination

- Compelling transcript examples

- Limited Scope

- Low novelty

- More thought on mitigation

- Writing issues
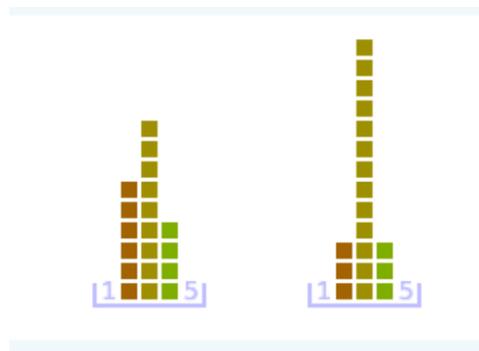
Follow-on Work

- Encrypted Access Logging for Online Accounts: Device Attributions without Device Tracking, *Pérez, Daffalla, Ristenpart, USENIX Security 2025*

- Use OS-provided device identifiers

- Encrypt them to hide from service providers
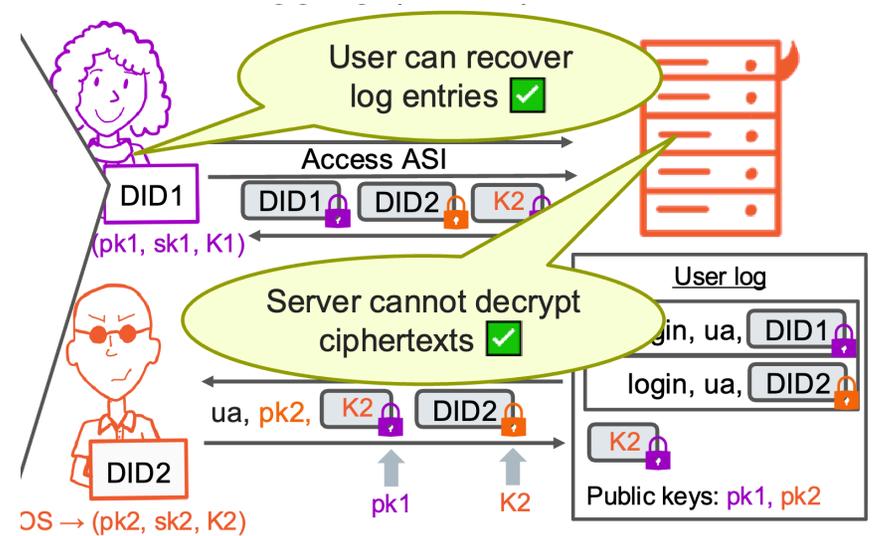
Privacy in ASIs

- ASIs reveal sensitive information

  - Locations, devices, activity times

- How do we balance privacy risks with security benefits?

- Should it be possible to disable / limit ASIs?

Better interface design

- How could we make ASIs more usable?

Methodology

- Qualitative vs quantitative research

- Can we learn something useful from small user samples?

Improved scope

- How could this work have been expanded?

- How would that improve validity / enable new insights?