



IOT AND PRIVACY WORKSHOP

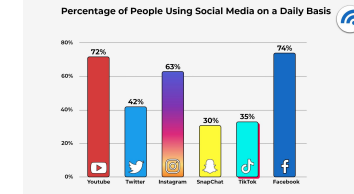
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MEET THE NETWORK NINJAS

Social Media Users?



4,900,000,000

Demandsage

Data Collection

WEB TRACKING

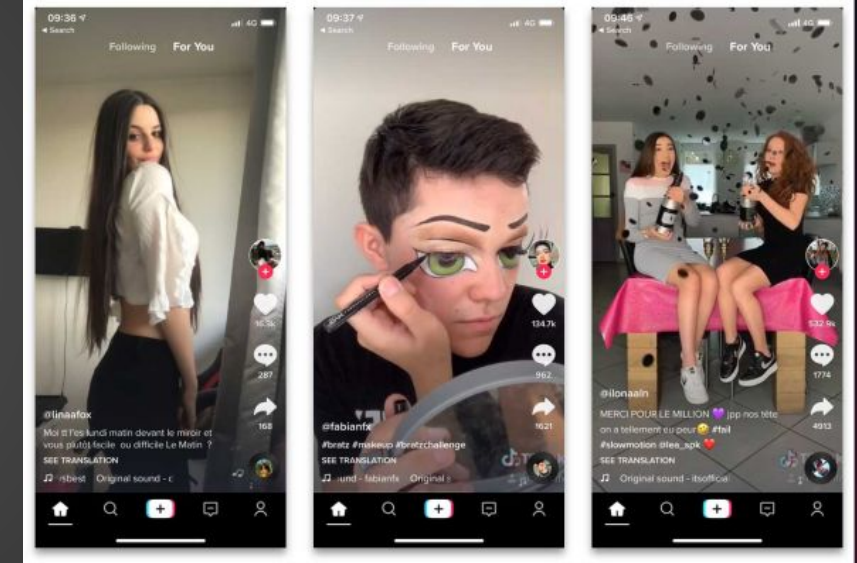
- **Cookies:** Websites often utilize cookies, small text files stored on users' devices, to track their interactions. These cookies can store information such as browsing history, preferences, and login credentials.
- **Fingerprinting:** Web tracking can also involve browser fingerprinting, which creates a unique identifier based on various parameters such as browser version, installed plugins, screen resolution, and system fonts. This technique helps distinguish and track users even without the use of cookies.
- **Third-Party Tracking:** Many websites integrate third-party services, such as advertising networks or analytics providers, that can track user behavior across multiple sites. These third-party trackers can gather data about users' browsing habits, interests, and demographics.
- **Cross-Site Tracking:** Cross-site tracking occurs when trackers follow users across different websites, enabling them to build comprehensive profiles of users' online behavior. This data is often used for targeted advertising and personalization.
- **Data Aggregation and Profiling:** The collected data is aggregated, analyzed, and profiled to create detailed user profiles. These profiles are then used for targeted advertising, content customization, or sold to third parties.

WEB TRACKING ON TIKTOK

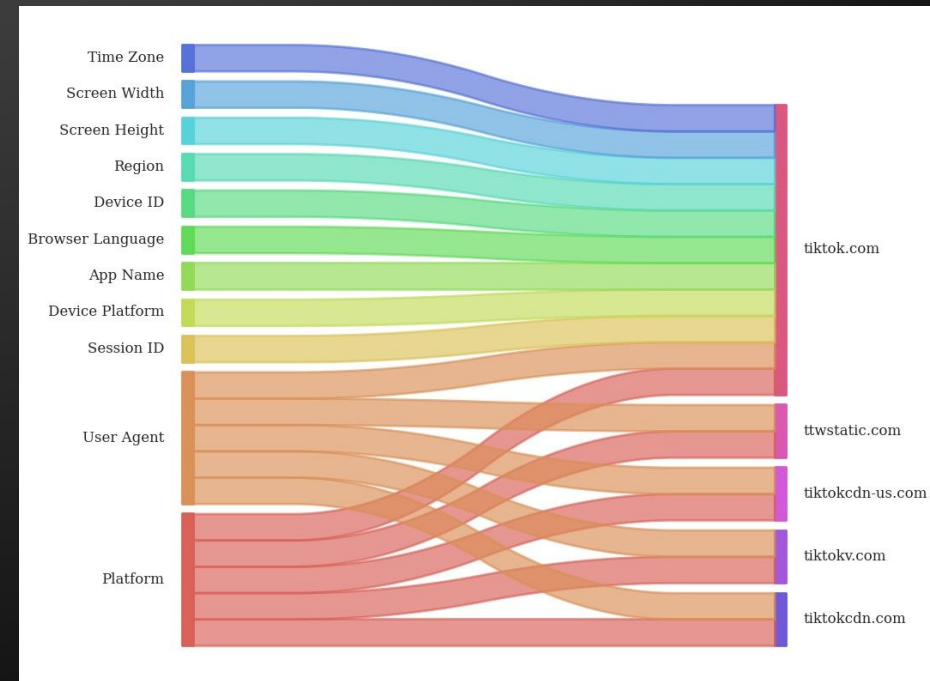
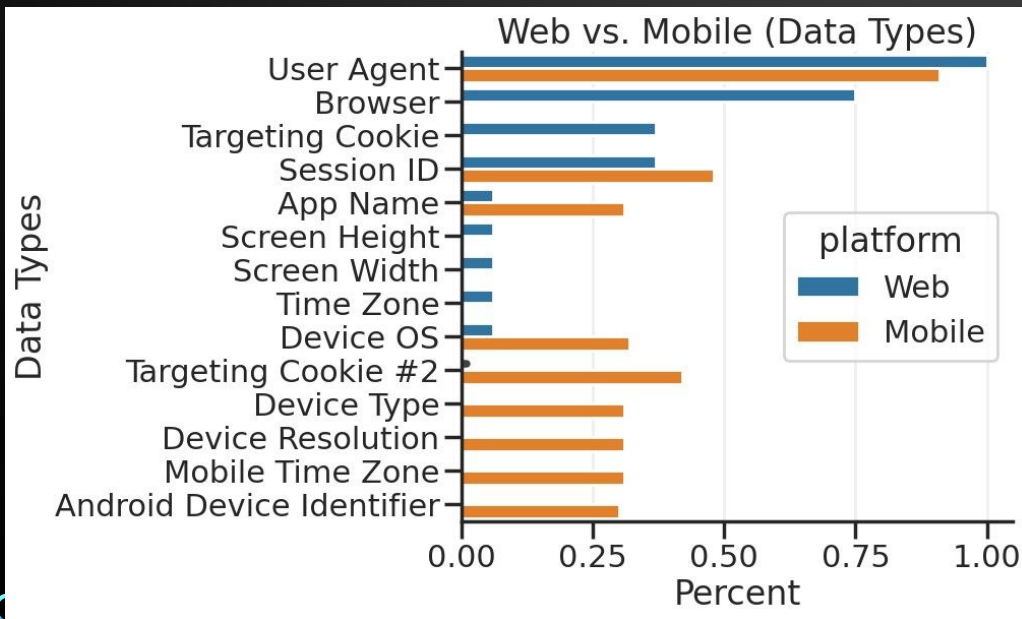
- User Data during use:
 - Videos : Time spent
Engagement level
Platform interaction
- Device Information:
 - Device type
 - Operating system
 - GPS / WIFI Access
 - Location Information
- Outside information about you from 3rd party groups

TIKTOK

- Learn what Tik Tok is collecting by inspecting the network traffic.
- Used Tik Tok on the web and collect a HAR file. Used that file to perform data analysis see the datatypes and where the requests are being sent.



TIKTOK



COMBAT TRACKING

- Install AdBlockers

- AdBlock Plus

- uBlock Origin



- Use private and secure web browser.

- Brave Browser

- Opera Browser



- What do they do? They stop advertising and tracking

- By blocking HTTP request headers

- Hide HTML ad elements

- Block JS





IOT DEVICES AND PRIVACY

- IoT devices has made data privacy challenging
- Connected devices collect vast amounts of personal data.
- Alexa / Google home / Ring

MYCROFT AI

- World's leading open-source voice assistant
- Active focus on privacy
 - End-to-end encryption
 - NO data storage
 - Regular security updates

What in Voice Tech is Open Source?

Stack Component	Mycroft	Alexa	Cortana	Google Assistant	Siri
Wake-Word	✓ PocketSphinx, moving to Precise	✗ Alexa Voice Services	✗ Microsoft Speech API	✗ Google Cloud Speech API	✗
Speech-to-Text	✓ Mozilla DeepSpeech (from March 2018)	✗	✗ MS SAPI, Project Oxford	✗ Google STT	✗
Natural Language Understanding	✓ Adapt and Padatious	✗ Alexa Voice Services	✗ LUIS	✗	✗
Text-to-Speech	✓ Mimic (based on CMU Flite)	✗ Polly	✗	✗ Google TTS	✗
Skills Framework	Python	Lambda framework, functional programming	Cortana Skills Framework, node.js or .NET	DialogFlow	N/A

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SKILL DEVELOPMENT

- Our skill hacks a server
 - Responds with a message
 - Followed by a sound
 - Ending with final message of completion

```
pi@mark_1: ~
Log Output:
===== mycroft-core 0.9.12 =====
----- requests.packages.urllib3.connectionpool - DEBUG - Starting new HTTPS connection (1): api.mycroft.ai
----- r_loop:utterance", "data": {"lang": "en-us", "utterances": ["What's the weather?"]}, "context": null}
-----": {"lang": "en-us", "skill_id": 1017122086, "utterances": ["What's the weather?"]}, "context": null}
-----type": "skill.converse.response", "data": {"skill_id": 1017122086, "result": false}, "context": null}
-----": "weather", "match": "weather"}], "utterance": "What's the weather?", "context": {"target": null}}
----- requests.packages.urllib3.connectionpool - DEBUG - Starting new HTTPS connection (1): api.mycroft.ai
-----type": "mycroft.skill.handler.start", "data": {"handler": "handle_current_weather"}, "context": null}
-----https://api.mycroft.ai:443 "GET /v1/device/79e1923a-12bf-41aa-b826-1843f0129cd3/skill HTTP/1.1" 200 2
-----78 - mycroft.skills.settings: upload_meta:277 - INFO - sending settingsmeta.json for Mark1 to servers
----- requests.packages.urllib3.connectionpool - DEBUG - Starting new HTTPS connection (1): api.mycroft.ai
-----ttps://api.mycroft.ai:443 "GET /v1/owm/weather?lat=39.099727&lang=en&lon=-94.578567 HTTP/1.1" 200 453
----- requests.packages.urllib3.connectionpool - DEBUG - Starting new HTTPS connection (1): api.mycroft.ai
-----pi.mycroft.ai:443 "GET /v1/owm/forecast/daily?lat=39.099727&lang=en&lon=-94.578567 HTTP/1.1" 200 1993
-----:26.283 - SKILLS - DEBUG - {"type": "enclosure.mouth.events.deactivate", "data": {}, "context": null}
-----EBUG - {"type": "enclosure.weather.display", "data": {"temp": "-17", "img_code": 0}, "context": null}
----- and -17 degrees celsius. Today's forecast is for a high of -11 and a low of -20.", "context": null}
-----26.350 - SKILLS - DEBUG - {"type": "recognizer_loop:audio_output_start", "data": {}, "context": null}
10:56:30.713 - SKILLS - DEBUG - {"type": "enclosure.eyes.blink", "data": {"side": "b"}, "context": null}
^---- NEWEST ----^
History =====
What time is it?
>> 04:56
What's the weather?
>> It's currently clear sky and -17 degrees
celsius. Today's forecast is for a high of -11
and a low of -20.
Log Output Legend ===== Mic Level ==
DEBUG output --- 260.38
mycroft-skills.log, other
mycroft-speech-client.log

Input (':' for command, Ctrl+C to quit) =====
> Tell me a joke 0 *
```

- We activate our skill through the mycroft-cli-client



OVERALL EXPERIENCE

- Developed skills
 - Raspberry Pi
 - Monitoring Network Traffic (Wireshark)
 - Navigating Linux with terminal commands
 - Teamwork and cooperation
 - Troubleshooting and debugging

THANK YOU

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Tany-Sanchez



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