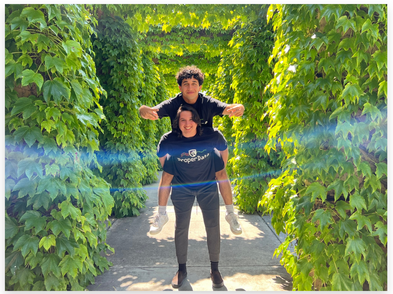

2023 Privacy and IoT Research Exploration

Team Rapidfire

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ProperData

INTRODUCTION

The issue of online **privacy** has become one that is constantly downplayed by large **corporations** for one reason: **money**. In this research workshop, looked at **TikTok** and IoT devices like **Amazon**'s Alexa. We also explored a privacy-focused alternative to Alexa (without trackers).

With our research, we hope to shine light on some of the ways that big tech companies **collect**, **store**, and **sell** your **personal data** for their monetary gain, and to convince you to take your privacy back.

MYCROFT

We set-up our own voice assistant using the open-sourced **Mycroft** voice assistant. Some of the highlights include:

- **No** proprietary **tracking**, unlike Alexa
- Simple documentation for adding **custom skills**
- **Lightweight** and **quick**, using by a Raspberry Pi 400

Additionally, we created a virtual game of **hangman** that you can play with your voice!

Figure 1: Jibran debugging our hangman skill.

TIKTOK TRACKING

As the **middleman** between the advertisers and the users' eyes, TikTok is required to make the process for advertisers as easy and effective as possible. TikTok **tracks** users' **interests**, **activity**, and device information. Interestingly, however, tracking behavior differs between the mobile and the web clients.

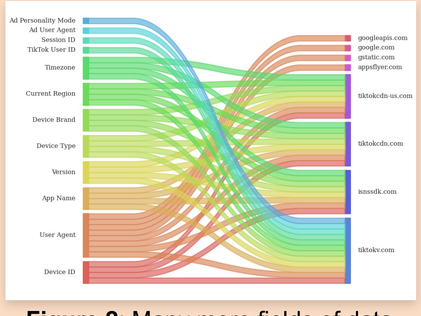

Figure 2: Many more fields of data were collected from TikTok **Mobile** (and some were sent to **Google**!)

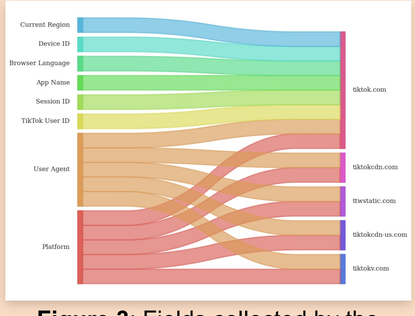

Figure 3: Fields collected by the TikTok **Web** application

ALEXA DATA

949	B07YCKFC-sim	639242ca-a58a-	tls	10.42.0.11	54.239.31.237	443	23	mlis.amazon.com
950	B07YCKFC-sim	65806474-cc85-	tls	10.42.0.11	54.239.31.237	443	18	mlis.amazon.com
951	B07YCKFC-sim	746cccb8-6825-	tls	10.42.0.11	54.239.31.237	443	4	mlis.amazon.com
952	B07YCKFC-sim	7aa18b7e-0ada-	tls	10.42.0.11	54.239.31.237	443	11	mlis.amazon.com
953	B07YCKFC-sim	7add5d36-8e97-	tls	10.42.0.11	54.239.31.237	443	15	mlis.amazon.com
954	B07YCKFC-sim	7ebb6d92-2703-	tls	10.42.0.11	54.239.31.237	443	10	mlis.amazon.com
955	B07YCKFC-sim	92d876a6-fa18-4	tls	10.42.0.11	54.239.31.237	443	7	mlis.amazon.com
956	B07YCKFC-sim	945e7c20-8e80-	tls	10.42.0.11	54.239.31.237	443	1	mlis.amazon.com
957	B07YCKFC-sim	95f68355-d625-4	tls	10.42.0.11	54.239.31.237	443	12	mlis.amazon.com
958	B07YCKFC-sim	9e967271-7e9c-	tls	10.42.0.11	54.239.31.237	443	14	mlis.amazon.com
959	B07YCKFC-sim	b9b267e0-c2f9-4	tls	10.42.0.11	54.239.31.237	443	19	mlis.amazon.com
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964	B07YCKFC-sim	e3e3fbbe-5735-4	tls	10.42.0.11	54.239.31.237	443	16	mlis.amazon.com
965	B07YCKFC-sim	f11682a2-c228-4	tls	10.42.0.11	54.239.31.237	443	6	mlis.amazon.com
966	B07YCKFC-sim	facdc171-67fd-4	tls	10.42.0.11	54.239.31.237	443	5	mlis.amazon.com
967	B07YCKFC-sim	fe570f1d-dc10-4	tls	10.42.0.11	54.239.31.237	443	8	mlis.amazon.com

Figure 4: Of the **967** requests made by Alexa, **348** of them were identified as trackers.

CHALLENGES

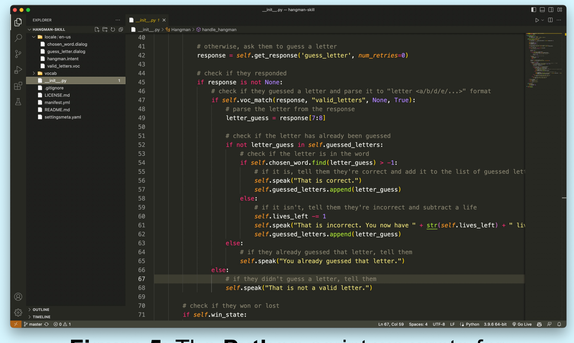

Figure 5: The **Python** script we wrote for our custom hangman Mycroft skill.

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We would **love** to dedicate this section to the **instructors** of the program: Marilyne Tamayo, Ernest Garrison, Hieu Le, Rahmadi Trimananda, and Alison Iversen for their **dedication** to this program. A **special** thank you to **every guest speaker** who spent their time informing us about the various subject they are researching, as well as the UCI Catering team (other than chili day). We greatly appreciate everyone and all that you've taught!

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