2023 Privacy and IoT Research Exploration

Mily

Emily Nguyen, Kamily Paipay
Saddleback College, Orange Coast College, University of California, Irvine

ProperData

INTRODUCTION

Billions of people use the internet to interact and exchange information with one another. Many use smart technology like speakers, watches, phones, and computers in their everyday lives. As people share more about ourselves on the internet, trackers and cookies are often collecting data on individuals from this information. A breach of user information and privacy stands as a threat to these individuals and society. It is critical for users to be aware of this data collection and protect their information. Through this workshop, our goal was to familiarize ourselves with the importance of security and the actions that should be taken by smart device users to protect themself on the internet.
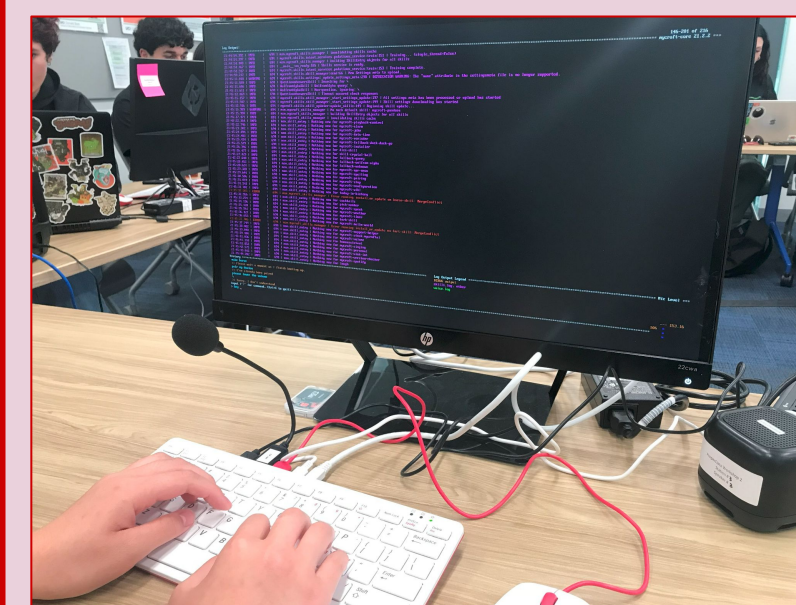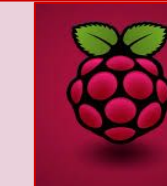
Raspberry Pi and Mycroft

Figure 2 : Amazed by Mycroft

Figure 1 : Testing mycroft horse skill

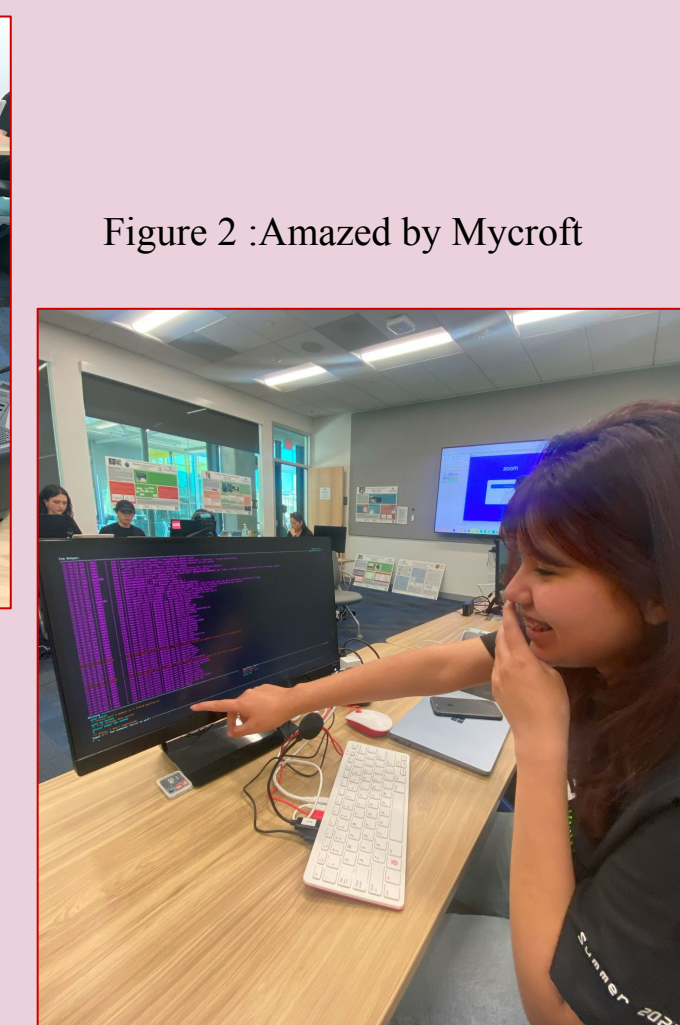### MATERIALS
To create and use skills, we needed the Raspberry Pi 400, a speaker, microphone, sd card, and Mycroft AI software

WHAT WE LEARNED
Being unfamiliar with the Raspberry PI and Mycroft AI, nearly every topic was brand new for us. Through experience, instructions, and help from instructors, we learned how to operate this device and the functionality of the voice assistant, Mycroft.

CHALLENGES FACED
The speakers of the Raspberry PI would often not output audio or would only work at certain volumes. As we became more familiar with the settings and learned more about how Mycroft operated, we were able to resolved the issues

TikTok

TikTok can be used on the web and mobile devices. Many trackers were found collecting data about the user. Both platforms collected information about users' web content.

WEB
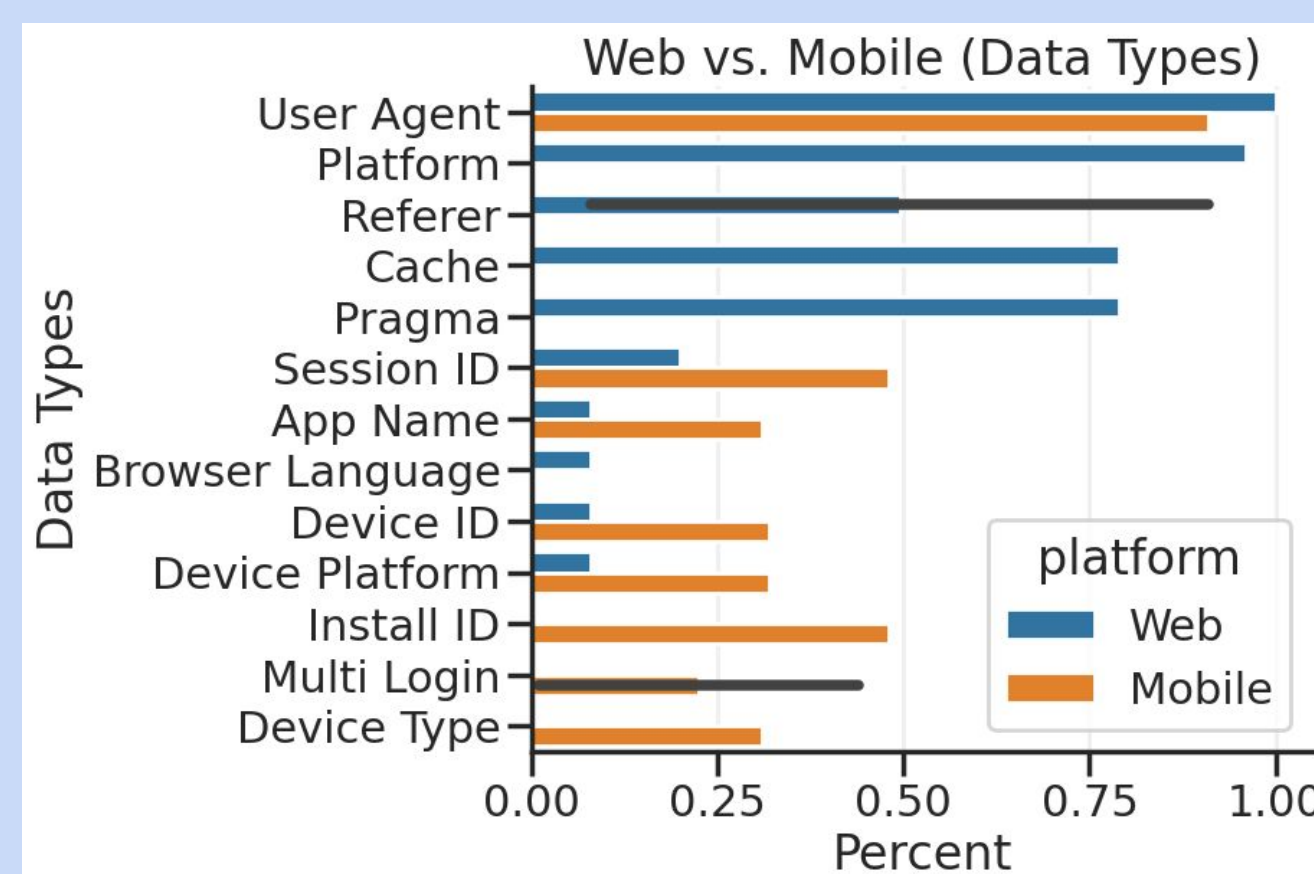The web platform of Tik Tok also collected information about
- previous pages user was on
- pervious platform the user was on

MOBILE
The mobile TikTok. platform tracked
- amount of time user logged into TikTok
- how long they were actively using the app.

Figure 3 : Different types of trackers found on both TikTok platforms, web and mobile

Alexa

With the skills and information given to us, trackers were not found within Alexa. Though we did not discover any trackers within Alexa, if given more time, data, and other information to test, trackers would undoubtedly be found on the device.

Figure 4 : Graph about ALexa's trackers not found

ACKNOWLEDGEMENTS

We knew near to nothing about the importance of privacy, IoT, and how to use a Raspberry Pi before this experience.. Thank you to every single organizer, instructor, and speaker for making this opportunity possible and giving us the greatest experience.

Mycroft

SKILLS
To become familiar with how skills worked, we downloaded the skills, 8 ball and weather. Eventually, we were able to create our own Mycroft skill, horse. Horse would take a key activation word to output different horse noises to the user.

DATA COLLECTED
After using Mycroft's skills, we collected data to see what may be tracked by the software. We found that Mycroft did not use any trackers and did not collect any privacy breaching information about the user.
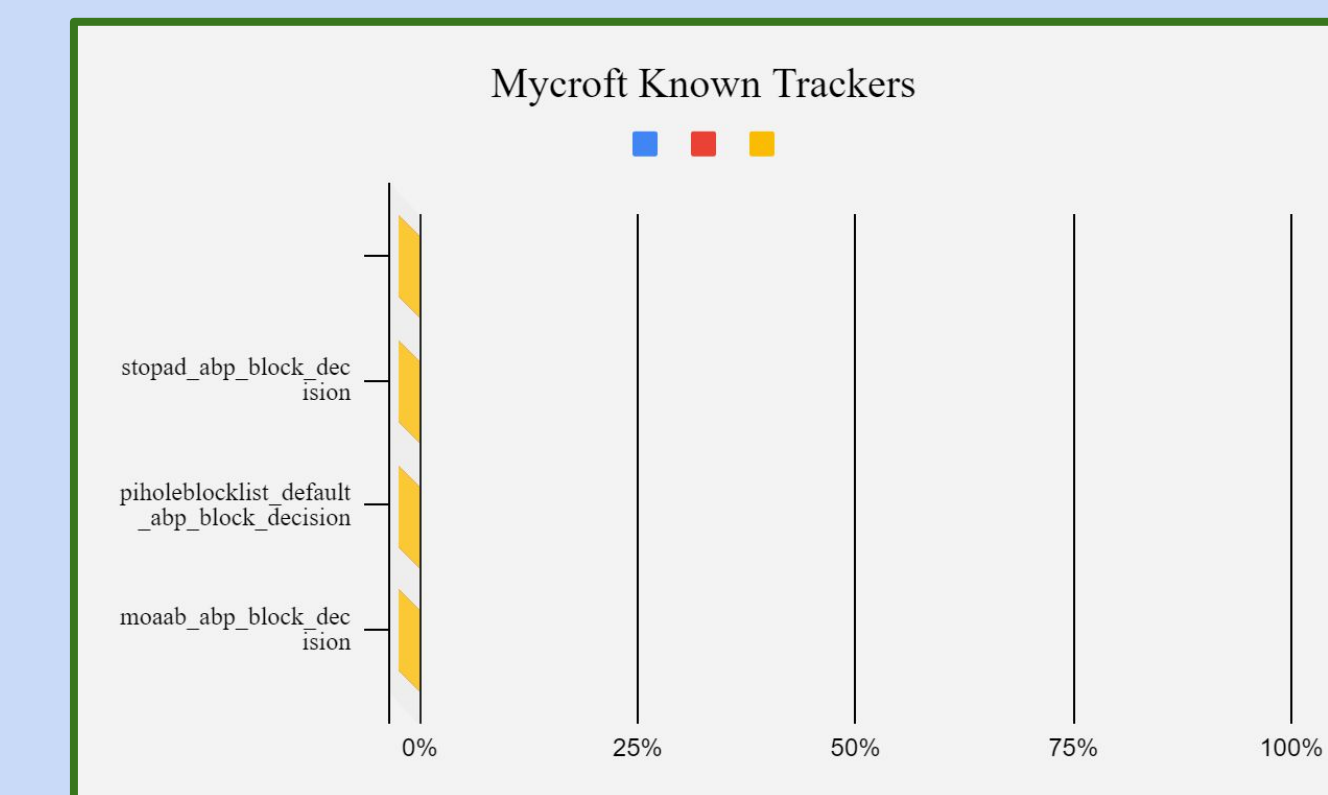

Figure 5 : Mycroft Graph no trackers found