

# Privacy and Internet-of-Things (IoT)

## Research Exploration Workshop 2

June 20 - July 1, 2022

ISEB 1310 - University of California, Irvine

### About the Event

The technical goal of our Privacy and IoT Research Exploration Workshop 2 was for students to understand the privacy issues related to smart speakers and how voice assistants are used for ad tracking, targeting, and personalization. We offered hands-on tutorials on Raspberry Pi programming, network traffic monitoring, web crawling, and basic statistical analysis. Students first developed their own virtual assistant on Raspberry Pi microcomputers by installing the Mycroft operating system and installing unique skills similar to the skills Alexa has. In the second part of the program, we focused on privacy issues in commercial smart speakers. Exercises included leaking data with automated interactions, measuring the collection of leaked data, and inferring the usage of the data in the wild.

We aimed to engage and recruit undergraduates from underrepresented groups in privacy, security, and computer science research. Our 18 program students came from primarily computer science and engineering majors across our Frontier partner institutions and community colleges throughout Southern California. In addition to a technical curriculum, students also engaged in career development opportunities such as: graduate student and faculty + industry panels, graduate school admissions, undergrad research, and public speaking workshops, and networking opportunities which included a visit to a local company in Irvine.

### Program Schedule

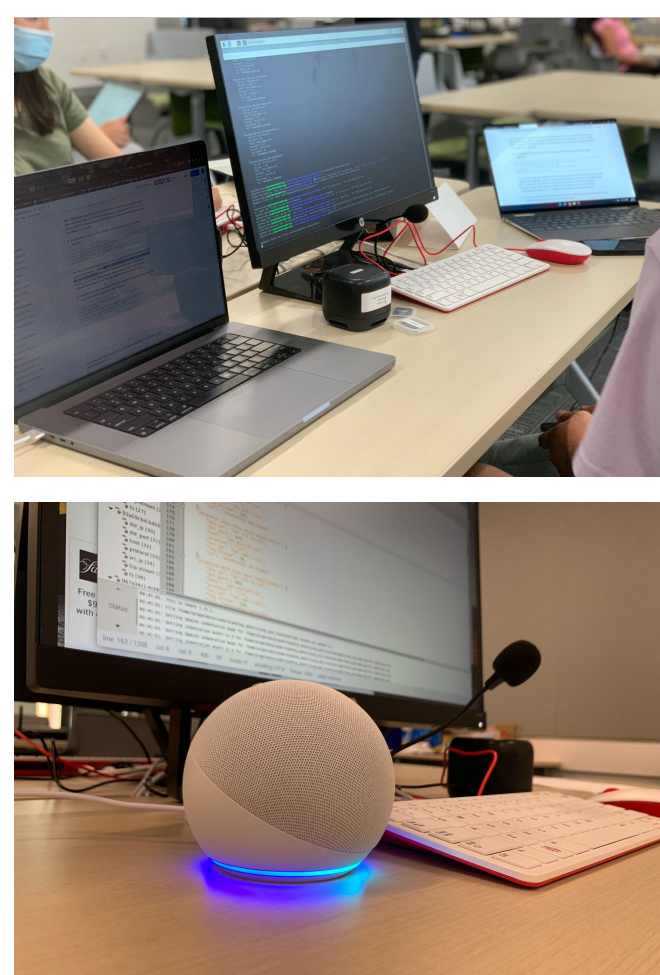
#### Week 1

<b>Monday, June 20</b>	<b>Welcome and Program Overview</b> <b>ProperData Frontier Introduction</b> <b>Lab 1: Project Orientation and Team Setups</b> <b>Cohort Building Activity</b>	<b>Build Your Own IoT Device: Mycroft Voice Assistant</b>
<b>Tuesday, June 21</b>	<b>Graduate Students + Recent Graduates Panel</b> <b>Lab 2: Raspberry Pi (RPI) Education Lab</b> <b>Student Wellness Workshop</b>	
<b>Wednesday, June 22</b>	<b>Graduate School Admissions Workshop</b> <b>Blackberry Data Science Presentation</b> <b>Faculty + Industry Panel</b> <b>Lab 3: Mycroft and Building the Device (Voice Assistant)</b>	
<b>Thursday, June 23</b>	<b>Lab 4: Mycroft Account and Skills</b> <b>"Data collection, usage, and sharing in the Alexa smart speaker ecosystem" Research Presentation</b> <b>Undergraduate Research Opportunities Program Workshop</b>	
<b>Friday, June 24</b>	<b>Lab 5: Understanding Ads and Tracking (Part 1)</b> <b>E-Sports Arena Tour</b>	<b>Explore IoT Privacy</b>



#### Week 2

<b>Monday, June 27</b>	<b>Lab 6: Understanding Ads and Tracking (Part 2)</b> <b>Crawling Session and Training Demo</b> <b>Student Poster Development</b>	<b>Understanding Ads and Tracking</b>
<b>Tuesday, June 28</b>	<b>Lab 7: Understanding Personalization</b> <b>Alexa Symptom Checker User Study</b>	<b>Understanding Personalization</b>
<b>Wednesday, June 29</b>	<b>Student Poster Development</b> <b>TinyML Workshop at Syntiant</b>	<b>Industry Visit</b>
<b>Thursday, June 30</b>	<b>Presentation Development</b> <b>Activate to Captivate Presentation</b> <b>Fundamentals Workshop</b>	<b>Symposium and Presentations</b>
<b>Friday, June 1</b>	<b>Symposium Posters and Presentations</b> <b>Closing Remarks &amp; End of Program</b>	



#### Workshop 2 Team:

**Organizers:** Athina Markopoulou, Marilyne Tamayo, and UCI Office of Access and Inclusion

**Teaching Team:** Ernest Garrison, Rahmadi Trimananda, Umar Iqbal, Janus Varmarken

<https://properdata.eng.uci.edu/>, contact: properdata@uci.edu

