Yeonjoon Lee

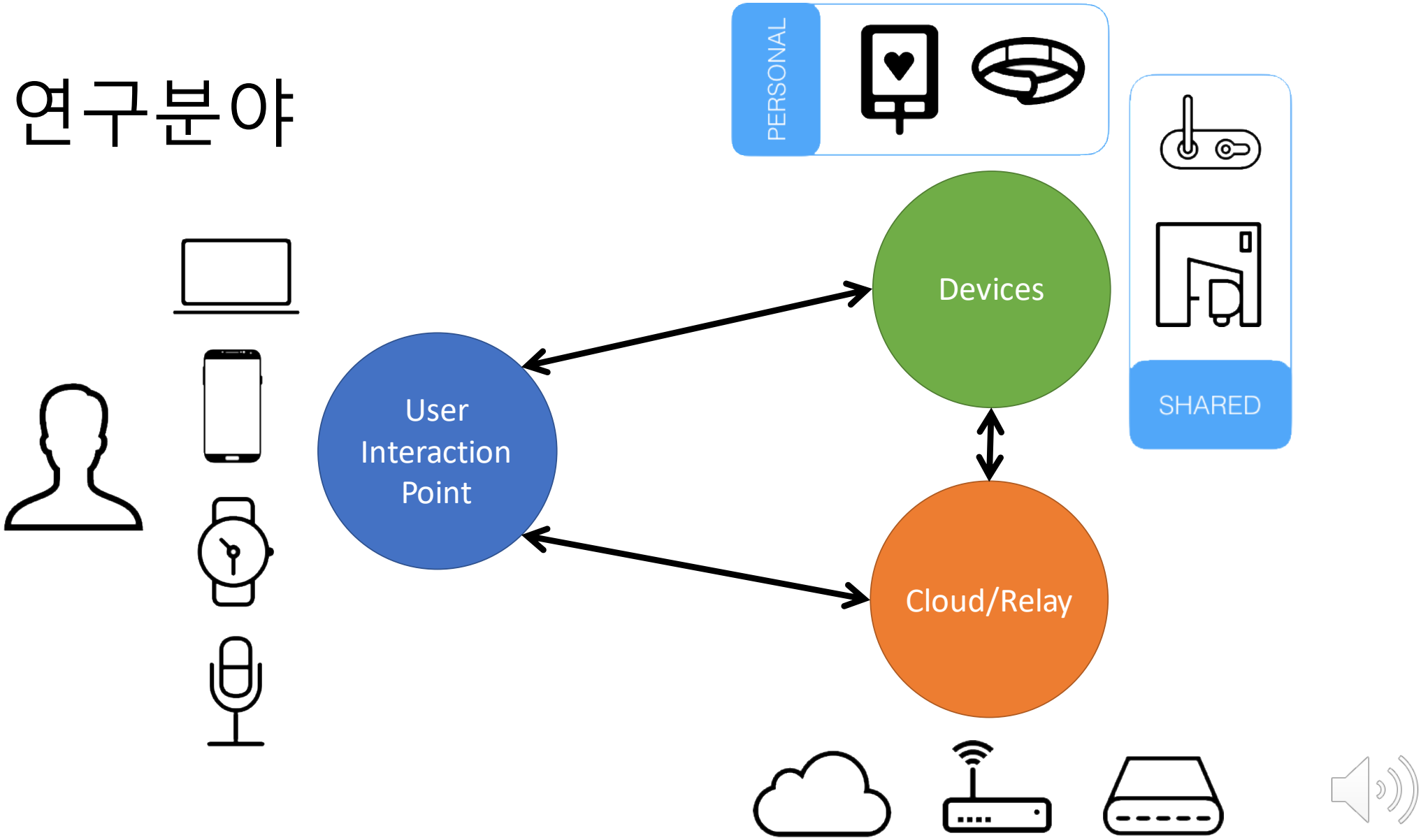
한양대학교 ERICA 소프트웨어학부 조교수

HANYANG
UNIVERSITY

소개

- **소속**: 한양대학교 ERICA 소프트웨어학부 조교수
- **박사학위**: Indiana University Bloomington (Advisor: XiaoFeng Wang)
- **전공**: Security Informatics (정보보안)

연구분야


PERSONAL
SHARED
Devices
User
Interaction
Point
Cloud/Relay

Publication List

- **Yeonjoon Lee**, Yue Zhao, Jiutian Zeng, Kwangwuk Lee, Nan Zhang, Yuan Tian, Kai Chen, XiaoFeng Wang, Faysal Hossain Shezan. SPEAKER-SONAR: A Sonar-based Liveness Detection System for Protecting Smart Speakers Against Remote Attackers. **UbiComp**, 2020.
- **Yeonjoon Lee**, Xueqiang Wang, Kwangwuk Lee, Xiaojing Liao, XiaoFeng Wang. Understanding Illicit UI in iOS apps Through Hidden UI Analysis. **TDSC**, 2019.
- **Yeonjoon Lee**, Xueqiang Wang, Kwangwuk Lee, Xiaojing Liao, XiaoFeng Wang, Tongxin Li, Xianghang Mi. Understanding iOS-based Crowdturfing Through Hidden UI Analysis. Accepted at USENIX **Security**, 2019.
- Yi Chen, Wei You, **Yeonjoon Lee**, Kai Chen, XiaoFeng Wang, Wei Zou. Mass Discovery of Android Traffic Imprints through Instantiated Partial Execution. In **CCS**, 2017.
- Soteris Demetriou, Nan Zhang, **Yeonjoon Lee**, XiaoFeng Wang, Carl A Gunter, Xiaoyong Zhou, Michael Grace. HanGuard: SDN-driven protection of smart home WiFi devices from malicious mobile apps. In **WISEC**, 2017.
- **Yeonjoon Lee**, Tongxin Li, Nan Zhang, Soteris Demetriou, Mingming Zha, XiaoFeng Wang, Kai Chen, Xiaoyong Zhou, et al., Ghost Installer in the Shadow: Security Analysis of App Installation on Android. In **DSN**, 2017.
- Kai Chen, Xueqiang Wang, Yi Chen, Peng Wang, **Yeonjoon Lee**, XiaoFeng Wang, et al., "Following Devil's Footprints: Cross-Platform Analysis of Potentially Harmful Libraries on Android and iOS". In **S&P**, 2016.
- Kai Chen, Peng Wang, **Yeonjoon Lee**, XiaoFeng Wang, Nan Zhang, et al., "Finding Unknown Malice in 10 Seconds: Mass Vetting for New Threats at the Google-Play Scale". In USENIX **Security**, 2015.
- Soteris Demetriou, Xiaoyong Zhou, Muhammad Naveed, **Yeonjoon Lee**, et al., "What's in Your Dongle and Bank Account? Mandatory and Discretionary Protection of Android External Resources". In **NDSS**, 2015.
- Tongxin Li, Xiaoyong Zhou, Luyi Xing, **Yeonjoon Lee**, Xiaofeng Wang, Xinhui Han, "Mayhem in the Push Clouds: Understanding and Mitigating Security Hazards in Mobile Push-Messaging Services". In **CCS**, 2014.
- Xiaoyong Zhou, **Yeonjoon Lee**, Nan Zhang, et al., "The Peril of Fragmentation: Security Hazards in Android Device Driver Customizations". In **S&P**, 2014.

Research Area

- **Mobile Systems Security**
  - Vulnerabilities in Android app installation
  - Vulnerabilities in Android device driver customization
  - Vulnerabilities in Mobile push-messaging service
- **Mobile Malware Detection and Identification**
  - Detection of hidden-UI based malware
  - Detection of repackaged malware
  - Detection of iOS malware based on cross-comparing with Android
  - Identification of malware based on network signatures
- **IoT Security**
  - Router-based protection for IoT devices
  - Sonar-based protection for voice interfaces of smart speakers

Understanding iOS-based Crowdturfing Through Hidden UI Analysis

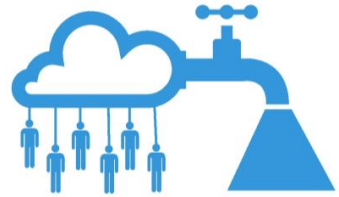
USENIX Security 2019

Introduction

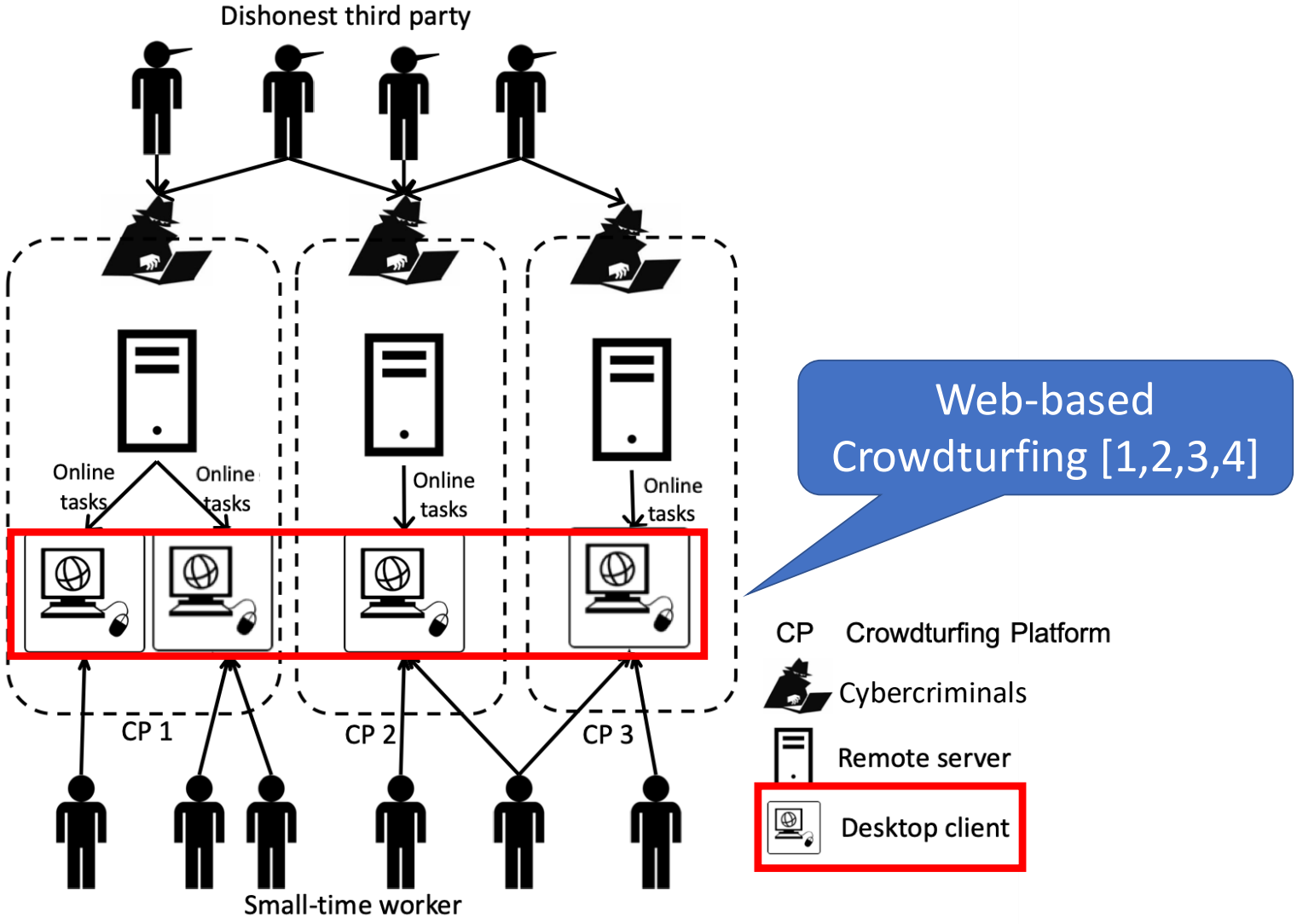
- **Fake reviews**
  - yelp reviews, amazon reviews
- **Fake news**
  - Spreading rumors through posts or twitter
- **Fake accounts**
  - Fake accounts on online stores
- **Fake app reviews or installation**
  - App ranking manipulation

Crowdturfing: definition

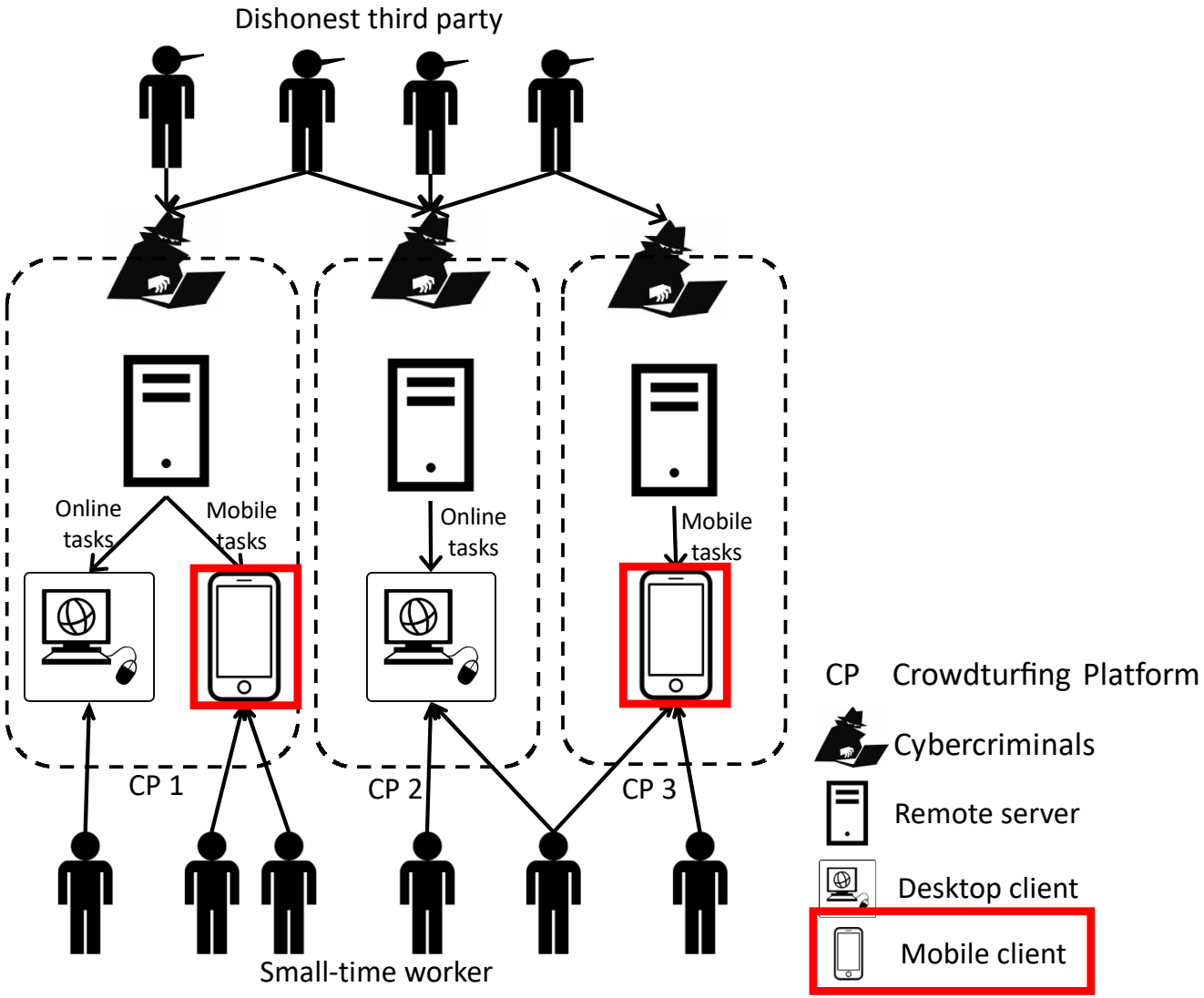
- **Crowdturfing**: malicious crowdsourcing
  - It is an illicit business model, in which ***Cybercriminals*** recruit ***small-time workers*** to carry out ***malicious tasks*** for ***dishonest third parties***.



Crowdturfing: platform

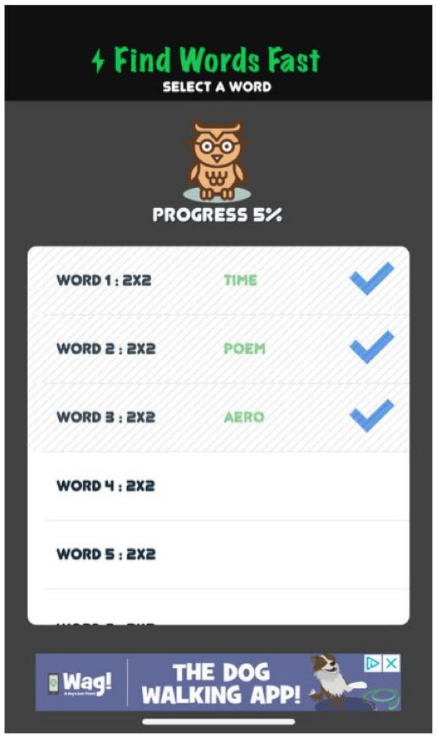


Crowdturfing: platform

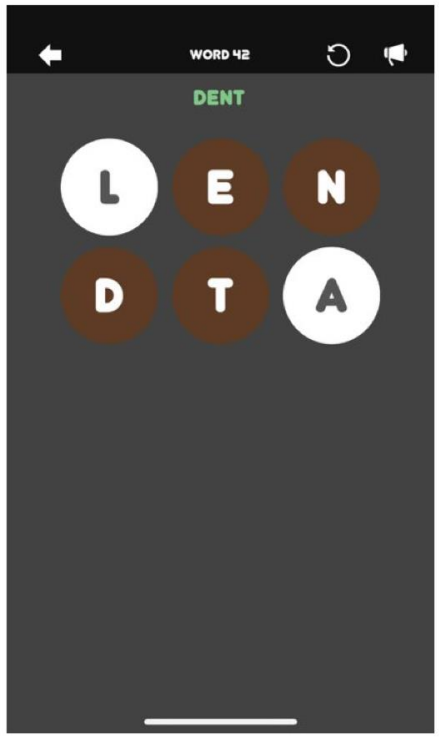


Crowdturfing apps

Word Game UI

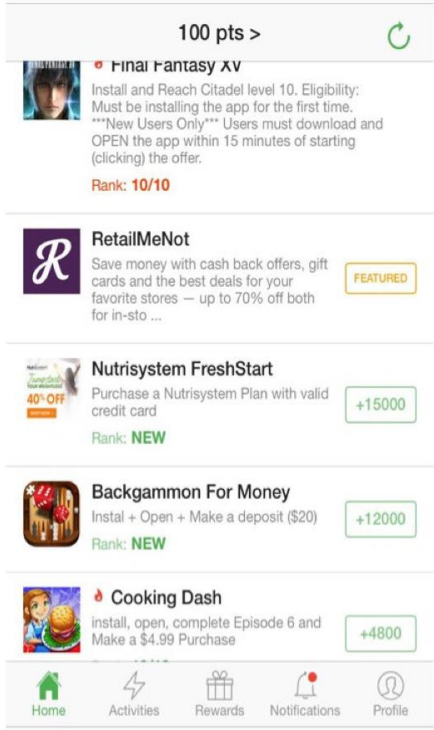


Game list

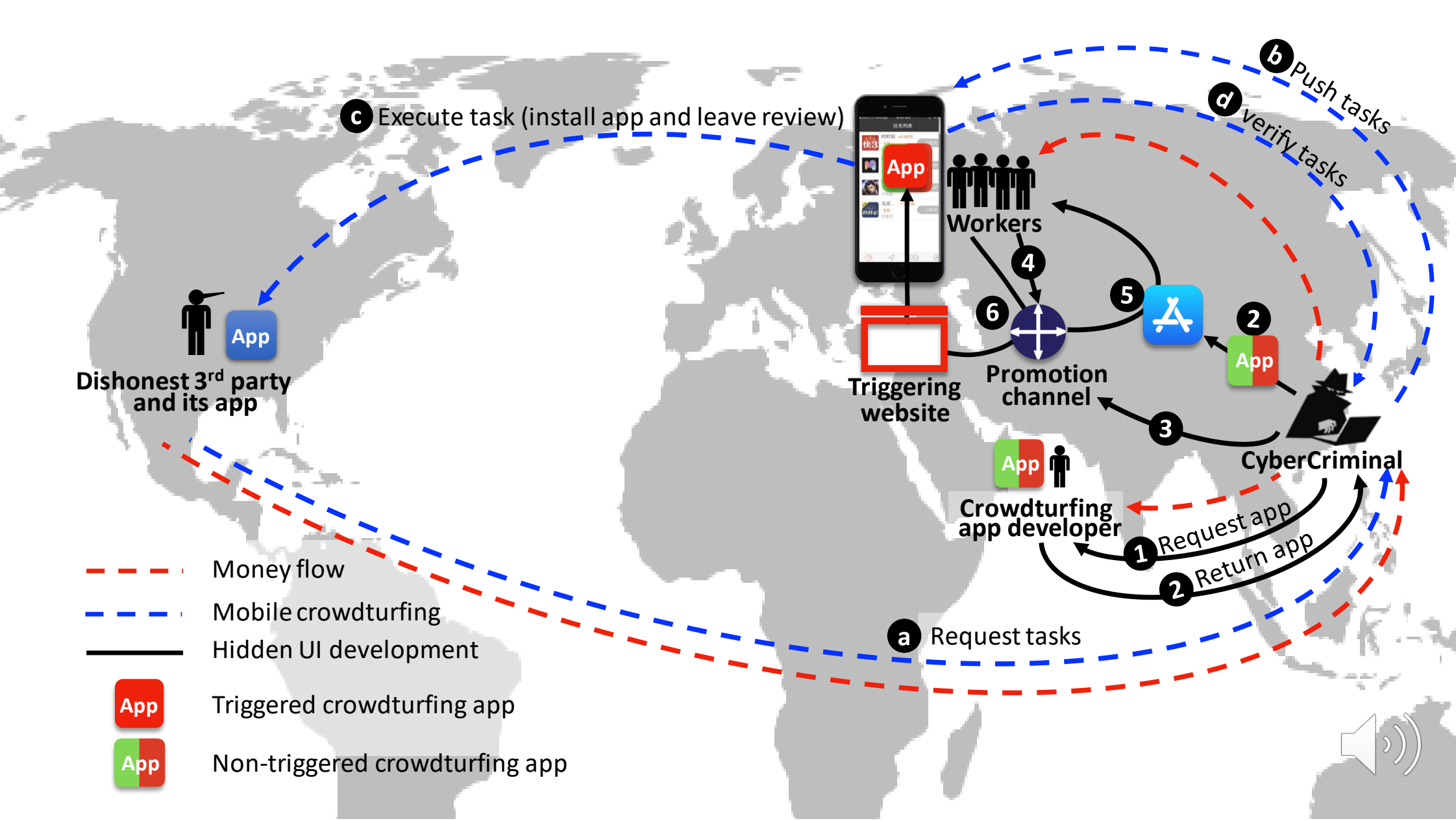


Game UI

Crowdturfing UI



Task list


b Push tasks
d verify tasks
c Execute task (install app and leave review)
App
Workers
4
6
5
2
App
Dishonest 3rd party and its app
App
Triggering website
Promotion channel
3
CyberCriminal
App
Crowdturfing app developer
1 Request app
2 Return app
a Request tasks
Money flow
Mobile crowdturfing
Hidden UI development
App
Triggered crowdturfing app
App
Non-triggered crowdturfing app

Q&A

- Email: yeonjoonlee@hanyang.ac.kr

- Website: yeonjoonlee.com