

# WEIJIA HE

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## RESEARCH INTERESTS

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Security & Privacy; Human-Computer Interaction (HCI); Internet of Things (IoT); Ubiquitous Computing

## EMPLOYMENT

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### University of Southampton

Lecturer/Assistant Professor

2024 – Present

Southampton, UK

### Dartmouth College

Postdoctoral Researcher

Advisor: Prof. David Kotz

2022 – 2024

Hanover, NH, USA

### Data Science Institute Summer Lab

Lab Coordinator

Duties for this position include giving workshops and mentoring research for high-school students.

Summer 2022

Chicago, IL, USA

## EDUCATION

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### University of Chicago

M.Sc. & Ph.D. in Computer Science

Advisor: Prof. Blase Ur

2017 – 2022

Chicago, IL, USA

### Shanghai Jiao Tong University

B.Eng. in Cybersecurity

2013 – 2017

Shanghai, China

## HONORS & AWARDS

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- 2022 Siebel Scholar (\$35,000)
- Finalist for the 2020 Norton LifeLock Graduate Fellowship
- Student Travel Grant for the 2019 IEEE Symposium on Security and Privacy (\$1,250)
- USENIX Security 2018 Student Grant (\$745)
- SOUPS 2018 Student Grant (\$770)

## CONFERENCE PUBLICATIONS

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### Moat: Adaptive Inside/Outside Detection System for Smart Homes

Chixiang Wang, **Weijia He**, Timothy J Pierson, David Kotz

In *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT/UbiComp)*. 2024.

### Well-intended but half-hearted: Hosts' consideration of guests' privacy using smart devices on rental properties

Sunyup Park, **Weijia He**, Elmira Deldari, Pardis Emami-Naeini, Danny Yuxing Huan, Jessica Vitak, Yaxing Yao, Michael Zimmer

In *Proceedings of the 20th Symposium on Usable Privacy and Security (SOUPS)*. 2024.

### Can Allowlists Capture the Variability of Home IoT Device Network Behavior?

**Weijia He**, Kevin Bryson, Ricardo Calderon, Vijay Prakash, Nick Feamster, Danny Yuxing Huang, Blase Ur

In *Proceedings of the 9th IEEE European Symposium on Security and Privacy (EuroS&P)*. 2024.

### Contextualizing Interpersonal Data Sharing in Smart Homes

**Weijia He**, Nathan Reitering, Atheer Almogbil, Yi-Shyuan Chiang, Timothy Pierson, David Kotz

In *Proceedings on Privacy Enhancing Technologies (PETS)*. 2024.

### SoK: Context Sensing for Access Control in the Adversarial Home IoT

**Weijia He**, Valerie Zhao, Olivia Morkved, Sabeeka Siddiqui, Earlence Fernandes, Josiah Hester, Blase Ur

In *Proceedings of the 6th IEEE European Symposium on Security and Privacy (EuroS&P)*. 2021.

## Trace2TAP: Synthesizing Trigger-Action Programs From Traces of Behavior

Lefan Zhang, **Weijia He**, Olivia Morkved, Valerie Zhao, Michael L. Littman, Shan Lu, Blase Ur  
*In Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT/UbiComp)*. 2020.

## AutoTap: Synthesizing and Repairing Trigger-Action Programs Using LTL Properties

Lefan Zhang, **Weijia He**, Jesse Martinez, Noah Brackenburg, Shan Lu, Blase Ur  
*In Proceedings of the 41st International Conference on Software Engineering (ICSE)*. 2019.

## How Users Interpret Bugs in Trigger-Action Programming

Will Brackenburg, Abhimanyu Deora, Jillian Ritchey, Jason Vallee, **Weijia He**, Guan Wang, Michael L. Littman, Blase Ur  
*In Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI)*. 2019.

## Rethinking Authentication and Access Control for the Home Internet of Things (IoT)

**Weijia He**, Maximilian Golla, Roshni Padhi, Jordan Ofek, Markus Dürmuth, Earlene Fernandes, Blase Ur  
*In Proceedings of the 27th USENIX Security Symposium (USENIX Security)*. 2018.

## WORKSHOP PUBLICATIONS

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### Device Discovery in the Smart Home Environment

Mounib Khanafer, Logan Kostick, Chixiang Wang, Wondimu Zegeye, **Weijia He**, Berkay Kaplan, Nurzaman Ahmed, David Kotz, Timothy J. Pierson  
*In Proceedings of the IEEE Workshop on the Internet of Safe Things (SafeThings)*. 2024.

### Challenges and Opportunities in Onboarding Smart-Home Devices

Chixiang Wang, Liam Cassidy, **Weijia He**, Timothy Pierson, David Kotz  
*In International Workshop on Mobile Computing Systems and Applications (HotMobile)*. 2024.

### The HandyTech's Coming Between 1 and 4: Privacy Opportunities and Challenges for the IoT Handyperson

Denise Anthony, Carl A. Gunter, **Weijia He**, Mounib Khanafer, Susan Landau, Ravindra Mangar, Nathan Reitingier  
*In Workshop on Privacy in the Electronic Society (WPES)*. 2023.

### When Smart Devices Are Stupid: Negative Experiences Using Home Smart Devices

**Weijia He**, Jesse Martinez, Roshni Padhi, Lefan Zhang, Blase Ur  
*In Proceedings of the IEEE Workshop on the Internet of Safe Things (SafeThings)*. 2019.

### Clap On, Clap Off: Usability of Authentication Methods in the Smart Home

**Weijia He**, Juliette Hainline, Roshni Padhi, Blase Ur  
*In Proceedings of the Interactive Workshop on the Human Aspect of Smarthome Security and Privacy (WSSP)*. 2018.

## SERVICE

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[Oakland] IEEE Symposium on Security and Privacy | *PC member* 2025  
[CCS] Conference on Computer and Communications Security | *PC member* 2025, 2024  
[PETS] Privacy Enhancing Technologies Symposium | *PC member* 2025, 2024, 2023  
[PETS] Privacy Enhancing Technologies Symposium | *Publication chair* 2023, 2022  
[USEC] Symposium on Usable Security | *PC member* 2025, 2024, 2023  
[SDIoTSec] NDSS Workshop on Security and Privacy in Standardized IoT | *PC member* 2024  
[EuroUSEC] European Workshop on Usable Security | *PC member* 2020, 2019  
Workshop on Ubiquitous Privacy: Research and Design for Mobile and IoT Platforms | *PC member* 2019  
[SOUPS] Symposium on Usable Privacy and Security | *Poster Jury* 2023, 2022, 2021  
[USENIX Security] USENIX Security Symposium | *Artifact Evaluation Committee Member* 2022, 2021  
[Oakland] IEEE Symposium on Security and Privacy | *Shadow PC member* 2020  
**External reviewers** at CSCW(2024), CHI (2024,2023,2022), TOCHI(2024), IMWUT(2022), TOSP(2023), IJHCS (2022, 2020), TIOT (2021)

## TEACHING EXPERIENCE

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**Principles of Cyber Security (COMP2216)**

*Instructor*

**Winter 2025**

*University of Southampton*

**Introduction to Computer Science (CMSC 15100)**

*Instructor*

**Summer 2021**

*University of Chicago*

**Introduction to Computer Security (CMSC 23200 / CMSC 33200)**

*Teaching Assistant*

**Winter 2022, 2021**

*University of Chicago*

**Machine Learning for Cybersecurity**

*Teaching Assistant*

**Spring 2021**

*University of Chicago Graham School*

**Ethics, Fairness, Responsibility, and Privacy in Data Science (CMSC 25900)**

*Teaching Assistant*

**Spring 2020**

*University of Chicago*

**Usable Security and Privacy (CMSC 23210 / CMSC 33210)**

*Teaching Assistant*

**Spring 2019, 2018**

*University of Chicago*

**Computer Science with Applications 1 (CMSC 12100)**

*Teaching Assistant*

**Fall 2017**

*University of Chicago*

## COMMUNITY OUTREACH

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**superpowHer: compileHer Tech Capstone 2019**

*Instructor*

**Apr. 2019**

*University of Chicago*

Duties for this outreach activity to middle school girls included giving workshops.