

Jingjie Li

PH.D. CANDIDATE · UNIVERSITY OF WISCONSIN-MADISON

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Current Position

University of Edinburgh

LECTURER (ASSISTANT PROFESSOR)

- Institute for Computing Systems Architecture, School of Informatics

Edinburgh

2023-Present

Education

University of Wisconsin-Madison

PH.D. COMPUTER ENGINEERING

- Department of Electrical and Computer Engineering
- Major Area: Computer Engineering, Minor Area: Computer Science
- Advisors: Prof. Younghyun Kim and Prof. Kassem Fawaz

Madison

2017-2023

University of Wisconsin-Madison

M.SC. COMPUTER ENGINEERING

- Department of Electrical and Computer Engineering

Madison

2017-2019

Australian National University

B.ENG. (HONOURS)

- Research School of Engineering
- Major: Electronic and Communication Systems | First Class Honours

Canberra

2015-2017

Beijing Institute of Technology

B.SC. (JOINT DEGREE WITH ANU)

- IT Advanced Class, School of Information and Electronics
- Major: Electronic Information Engineering

Beijing

2013-2015

Research Interests

Usable Privacy and Security, Human-Centered Systems, Augmented/Virtual Reality, Internet of Things

Professional Experience

2017-2023 **Research Assistant**, UW-Madison, USA

2022 **Research Intern**, Visa Research – Security, USA

2021 **Visiting Ph.D. Scholar**, Max Planck Institute for Security and Privacy, Germany (Virtual)

2016-2017 **Research Intern**, Commonwealth Scientific and Industrial Research Organisation, Australia

2015-2017 **Research Student**, ANU, Australia

Awards & Honors

2022 **CPS (Cyber-Physical Systems) Rising Star**, CPS-VO@National Science Foundation

Norton Labs Graduate Fellowship Finalist, NortonLifeLock

2021 **IEEE Micro Top Picks from the Computer Architecture Conferences**, IEEE

Qualcomm Innovation Fellowship Finalist, Qualcomm

2020 **Chancellor's Opportunity Fellowship**, UW-Madison

'Smart Cities - Smart Futures' Competition Finalist, Foxconn

- 2019 **Chancellor's Opportunity Fellowship**, UW-Madison
'Smart Cities - Smart Futures' Competition Final Winner, Foxconn
Qualcomm Innovation Fellowship Finalist, Qualcomm
ACM CHI Best Paper Award, ACM
- 2018 **ACM/IEEE ISLPED Low-Power Design Contest Award**, ACM/IEEE
A. Richard Newton Young Student Fellowship, Design Automation Conference (DAC)
- 2016 **Undergraduate International Partnership Scholarship**, ANU
- 2015 **Undergraduate International Partnership Scholarship**, ANU

Publications

SECURITY AND PRIVACY

- Jingjie Li**, Kaiwen Sun, Brittany Huff, Anna Bierley, Younghyun Kim, Florian Schaub, Kassem Fawaz. **"It's up to the Consumer to be Smart": Understanding the Security and Privacy Attitudes of Smart Home Users on Reddit**. IEEE S&P (Symposium on Security and Privacy), 2023.
- Kaiwen Sun, **Jingjie Li**, Yixin Zou, Florian Schaub, Chris Brooks. **The Portrayal of Children in Smart Home Marketing**. Workshop on Kids' Online Privacy and Safety (KOPS)@Symposium on Usable Privacy and Security, 2022.
- Jingjie Li**, Amrita Roy Chowdhury, Kassem Fawaz, Younghyun Kim. **Kalaido: Real-Time Privacy Control for Eye-Tracking Systems**. USENIX Security Symposium, 2021. (Acceptance Rate: 18.8%)
- Yongwoo Lee, **Jingjie Li**, Younghyun Kim. **MicPrint: Acoustic Sensor Fingerprinting for Spoof-Resistant Mobile Device Authentication**. EAI MobiQuitous (International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services), 2019.
- Jingjie Li**, Kassem Fawaz, Younghyun Kim. **Velody: Nonlinear Vibration Challenge-Response for Resilient User Authentication**. ACM CCS (Conference on Computer and Communications Security), 2019. (Acceptance Rate: 16%)

AFFECTIVE COMPUTING

- Roneel V. Sharan, Shlomo Berkovsky, Ronnie Taib, Irena Koprinska, **Jingjie Li**. **Detecting Personality Traits Using Inter-Hemispheric Asynchrony of the Brainwaves**. IEEE EMBC (Conference of Engineering in Medicine and Biology Society), 2020.
- Ronnie Taib, Shlomo Berkovsky, Irena Koprinska, Eileen Wang, Yucheng Zeng, **Jingjie Li**. **Personality Sensing: Detection of Personality Traits Using Physiological Responses to Image and Video Stimuli**. ACM TIIS (Transactions on Interactive Intelligent Systems), 2020.
- Shlomo Berkovsky, Ronnie Taib, Irena Koprinska, Eileen Wang, Yucheng Zeng, **Jingjie Li**, Sabina Kleitman. **Detecting Personality Traits Using Eye-Tracking Data**. ACM CHI (Conference on Human Factors in Computing Systems), 2019. (Best Paper)

POWER-EFFICIENT DESIGN

- Di Wu, **Jingjie Li**, Zhewen Pan, Younghyun Kim, Joshua San Miguel. **A Unary Brain Computer Interface**. International Symposium on Computer Architecture (ISCA), 2022. (Acceptance Rate: 16%)
- Di Wu, **Jingjie Li**, Hsuan Hsiao, Younghyun Kim, Joshua San Miguel. **uGEMM: Unary Computing for GEMM Applications**. IEEE Micro (Special Issue on IEEE Micro Top Picks), 2021.
- Di Wu, **Jingjie Li**, Setareh Behroozi, Younghyun Kim, Joshua San Miguel. **UNO: Virtualizing and Unifying Nonlinear Operations for Emerging Neural Networks**. ACM/IEEE ISLPED (International Symposium on Low Power Electronics and Design), 2021.
- Di Wu, **Jingjie Li**, Hsuan Hsiao, Younghyun Kim, Joshua San Miguel. **uGEMM: Unary Computing Architecture for GEMM Applications**. ACM/IEEE ISCA (International Symposium on Computer Architecture), 2020. (Acceptance Rate: 18%)
- Hanwook Chung, **Jingjie Li**, Younghyun Kim, Jennifer M.C. Van Os, Sabrina H. Brounts, and Christopher Y. Choi. **Using Implantable Biosensors and Wearable Scanners to Monitor Dairy Cattle's Core Body Temperature in Real-Time**. Computers and Electronics in Agriculture, 2020.

Younghyun Kim, Joshua San Miguel, Setareh Behroozi, Tianen Chen, Kyuin Lee, Yongwoo Lee, **Jingjie Li**, Di Wu. **Approximate Hardware Techniques for Energy-Quality Scaling Across the System**. ICEIC (International Conference on Electronics, Information, and Communication), 2020.

Jackson Melchert, Setareh Behroozi, **Jingjie Li**, Younghyun Kim. **SAADI-EC: A Quality-Configurable Approximate Divider for Energy Efficiency**. IEEE TVLSI (Transactions on Very Large Scale Integration Systems), 2019.

Setareh Behroozi, **Jingjie Li**, Jackson Melchert, Younghyun Kim. **SAADI: A Scalable Accuracy Approximate Divider for Dynamic Energy-Quality Scaling**. ASP-DAC (Asia South Pacific Design Automation Conference), 2019.

Hanwook Chung, **Jingjie Li**, Younghyun Kim, Christopher Y. Choi. **Continuous and Wireless Skin Contact and Ear Implant Temperature Measurements and Relations to the Core Body Temperature of Heat Stressed Dairy Cows**. ASABE ILES (International Livestock Environment Symposium), 2018.

Invited Talks

Feb-April, 2023. *Empowering Privacy-Preserving Interactions for Smart Device Users*. Invited by **Shanghai Jiao Tong University, Washington University in St. Louis, University of Edinburgh, University of Amsterdam, University of Central Florida, University of Notre Dame, and Pennsylvania State University**.

Nov 01, 2022. *Real-Time Privacy Control for Eye-Tracking Systems*. Invited by PrivacyCon @ **US Federal Trade Commission**.

Sept 07, 2022. *Usable Privacy Control for Real-Time Eye Tracking in AR/VR*. Invited by **Meta (formerly Facebook)**.

Aug 19, 2022. *Usable Privacy for Biometrics-Based Smart Devices*. Invited by Long Feng Science Forum @ **the Chinese University of Hong Kong, Shenzhen**.

Grant

Usable Privacy Control for Real-time Eye Tracking in AR/VR

AWARD: TOWARDS TRUSTWORTHY PRODUCTS IN AR, VR, AND SMART DEVICES (SPONSOR: META INC.)

- Principal investigators: Kassem Fawaz and Younghyun Kim
- Grant amount: 75,000.00 USD
- Responsibility: proposal writing and lead student contributor

Teaching & Mentoring Experience

Fall 2022 **ECE 751 Embedded Computing Systems**, Guest Lecturer, UW-Madison

CS 642 Introduction to Information Security, Guest Lecturer, UW-Madison

2021-2022 **NSF Research Experiences for Undergraduates Program**, Research Mentor, UW-Madison

Project: Human factors in hardware reverse engineering, Mentee:

- Lia Sudjana (Electrical Engineering)

2021-2022 **NSF Research Experiences for Undergraduates Program**, Research Mentor, UW-Madison

Project: Smart home privacy analysis, Mentees:

- Brittany Huff (Legal Studies & Psychology)
- Anna Bierley (Political Science)
- Lauren Damgaard (Legal Studies & Environmental Science)
- Lauren Smith (Psychology & Economics)
- Abigail Drucker (Psychology)
- Kirubana Olivia Devadas (Risk Management and Insurance)

2021-2022 **ECE 399 Independent Study**, Research Mentor, UW-Madison

Project: Federated learning for electromyography, Mentee:

- Victoria Schrimpf (Electrical Engineering)

2020-2021 **Undergraduate Research Scholars Program**, Research Mentor, UW-Madison

Project: Smart home privacy analysis, Mentee:

- Kobe Frimpong (Computer Science)

Spring 2019 **CS 354 Machine Organization and Programming**, Teaching Assistant, UW-Madison

- 2018 **Undergraduate Summer Research**, Research Mentor, UW-Madison
Project: IoT for dairy industry, Mentee:
• Anapat Chairithinugull (Computer Engineering)

Professional Development

- 2022 **CDIS Workshop (NSF Funding: Why, What and How)**, UW-Madison, USA
2022 **CPS Rising Stars Workshop (Academic Career Development)**, University of Virginia, USA

Services

PROFESSIONAL SERVICE

- ACM Conference on Computer and Communications Security 2023**, Technical Program Committee Member
IEEE/ACM Workshop on the Internet of Safe Things 2023, Technical Program Committee Member
IEEE Transactions on Mobile Computing, Reviewer
IEEE Pervasive Computing, Reviewer
IEEE Transactions on Computers, Reviewer
USENIX Security Symposium, External Reviewer
IEEE Symposium on Security & Privacy, External Reviewer
ACM Conference on Computer and Communications Security, External Reviewer
Design Automation Conference, External Reviewer
Asia and South Pacific Design Automation Conference, External Reviewer
International Symposium on Low Power Electronics and Design, External Reviewer
Symposium on Applied Computing, External Reviewer
International Conference on VLSI Design, External Reviewer

COMMUNITY SERVICE

- 2022-Present **Madison Tech Clinic**, Volunteer
• Providing services to prevent technology abuse in intimate partner violence
2016-2017 **Robogals**, Volunteer
• Organized educational events for Australian children to prompt diversity in STEM majors
2014-2015 **Student Union at School of Information and Electronics, BIT**, Director of Publicity
• Designed publicity materials for student events

Media Coverage

- Mar 04, 2022. *Understanding implications of augmented reality in manufacturing, privacy.* Covered by **the Badger Herald**.
Jan 04, 2022. *Come the Metaverse, Can Privacy Exist?* Covered by **the Wall Street Journal**.
Sept 23, 2021. *Announcing the winners of the 2021 Towards Trustworthy Products in AR, VR, and Smart Devices request for proposals.* Covered by **Meta Research**.
Apr 25, 2019. *Foxconn Announces Final Round Winners of “Smart Cities-Smart Futures” Competition.* Covered by **Urban Milwaukee**.
Dec 21, 2018. *“Smart City” awards recognize 14 UW-Madison students in first stage.* Covered by **UW-Madison News**.