

Pardis Emami-Naeini

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Research Interests

- Human Factors in Security and Privacy
- Societal Aspects of Internet of Things
- Statistical Modeling of Security and Privacy Behaviors

Education

2015 – 2020 **PhD. in Computer Science**, *Carnegie Mellon University*, Pittsburgh, PA.

Advisors: Lorrie Cranor and Yuvraj Agarwal.

Thesis Committee: Lujjo Bauer and Mohammad Reza Haghghat.

2015 – 2018 **M.Sc. in Computer Science**, *Carnegie Mellon University*, Pittsburgh, PA.

Advisor: Lorrie Cranor.

2011 – 2015 **B.Sc. in Computer Engineering**, *Sharif University of Technology*, Tehran, Iran.

Advisor: Ali Movaghar.

Employment

August 2020 – **Postdoctoral Researcher**, *University of Washington*, Seattle, WA.

Present Working with Tadayoshi Kohno and Franziska Roesner.

June 2020 – **Postdoctoral Researcher**, *Carnegie Mellon University*, Pittsburgh, PA.

Aug 2020 Worked with Lorrie Cranor and Yuvraj Agarwal.

Investigated the economic aspects of IoT privacy and security labels.

June 2019 – **Research Intern**, *Microsoft Research*, Redmond, WA.

August 2019 Worked with Kristin Lauter and Kim Laine.

Implemented homomorphic encryption schemes onto a system on a chip (SoC).

June 2017 – **Research Intern**, *Intel Corporation*, Santa Clara, CA.

August 2017 Worked with Mohammad Reza Haghghat, Richard Chow, and Heather Patterson.

Investigated the impact of social influence on IoT-related privacy decision making.

June 2014 – **Undergraduate Research Assistant**, *Sharif University of Technology*, Tehran, Iran.

May 2015 Worked with Ali Movaghar.

Developed and evaluated algorithms for energy efficient networking in wireless sensor networks and software defined networks (SDN).

- June 2014 – **Research Intern**, *University of Michigan*, Ann Arbor, MI.
 August 2014 Worked with **Mina Rais-Zadeh**.
 Designed and implemented a chip-scale clock that had consistency in the presence of fluctuations under extreme conditions, such as outer space.
- June 2014 – **Research Intern**, *University of Michigan*, Ann Arbor, MI.
 August 2014 Worked with **David Neuhoff**.
 Designed a method to classify different wood textures with minimum array of pixels information.
- June 2013 – **Research Intern**, *University of Michigan*, Ann Arbor, MI.
 August 2013 Worked with **Igor Markov**.
 Conducted research on optimizing the area and power in logic circuits.
- June 2012 – **Research Intern**, *Massachusetts Institute of Technology*, Boston, MA.
 August 2012 Worked with **Iman Soltani Bozchalooi**.
 Designed a wide-band nano-positioning stage for high-frequency stimulation of cartilage tissue for osteoarthritis research.

Selected Awards and Honors

- 2019–2020 CyLab Presidential Fellowship.
 2019 Rising Stars Research Pitch Award.
 2018–2019 UnifyID AI Fellowship (Declined).
 2017 Best Paper Award at CHI'17.
 2017 Scholarship Grant to attend Women in CyberSecurity conference (WiCyS).
 2017 Scholarship Grant to attend Enigma.
 2016 Scholarship Grant to attend Grace Hopper Celebration.
 2016 Scholarship Grant to attend USENIX Security.
 2016 Scholarship Grant to attend Women in CyberSecurity conference (WiCyS).
 2012–2015 Ranked 2nd in GPA among undergraduate students in the Department of Computer Engineering, Sharif University of Technology.

Publications

Refereed Conference Proceedings

- C10 **Pardis Emami-Naeini**, Tiona Francisco, Tadayoshi Kohno, and Franziska Roesner. Understanding Privacy Attitudes and Concerns Towards Remote Communications During the COVID-19 Pandemic. *In Proceedings of the 17th Symposium on Usable Privacy and Security (SOUPS '21)*.
- C9 **Pardis Emami-Naeini**, Janarth Dheenadhayalan, Lorrie Cranor, and Yuvraj Agarwal. Which Privacy and Security Attributes Most Impact Consumers' Risk Perception and Willingness to Purchase IoT Devices?. *In Proceedings of the 42nd IEEE Symposium on Security and Privacy (S&P '21)*.
- C8 **Pardis Emami-Naeini**, Yuvraj Agarwal, Lorrie Cranor, and Hanan Hibshi. Ask the Experts: What Should Be on an IoT Privacy and Security Label?. *In Proceedings of the 41st IEEE Symposium on Security and Privacy (S&P '20)*.

- C7 **Pardis Emami-Naeini**, Yuvraj Agarwal, Lorrie Cranor, and Henry Dixon. Exploring How Privacy and Security Factor into IoT Device Purchase Behavior. *In Proceedings of the 37th ACM Conference on Human Factors in Computing Systems (CHI '19)*.
- C6 **Pardis Emami-Naeini**, Martin Degeling, Richard Chow, Lujo Bauer, Lorrie Cranor, Mohammad Reza Haghighat, and Heather Patterson. The Influence of Friends and Experts on Privacy Decision Making in IoT Scenarios. *In Proceedings of the 21st ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW '18)*.
- C5 Hana Habib, **Pardis Emami-Naeini**, Summer Devlin, Maggie Oates, Chelse Swoopes, Lujo Bauer, Nicolas Christin, and Lorrie Faith Cranor. User Behaviors and Attitudes Under Password Expiration Policies. *In Proceedings of the 14th Symposium on Usable Privacy and Security (SOUPS '18)*.
- C4 Sarah Pearman, Jeremy Thomas, **Pardis Emami-Naeini**, Hana Habib, Lujo Bauer, Nicolas Christin, Lorrie Faith Cranor, Serge Egelman, and Alain Forget. Let's Go in For a Closer Look: Observing Passwords in Their Natural Habitat. *In Proceedings of the 24th ACM Conference on Computer and Communications Security (CCS '17)*.
- C3 **Pardis Emami-Naeini**, Sruti Bhagavatula, Hana Habib, Martin Degeling, Lujo Bauer, Lorrie Cranor, and Norman Sadeh. Privacy Expectations and Preferences in an IoT World. *In Proceedings of the 13th Symposium on Usable Privacy and Security (SOUPS '17)*.
- C2 Blase Ur, Felicia Alfieri, Maung Aung, Lujo Bauer, Nicolas Christin, Jessica Colnago, Lorrie Faith Cranor, Henry Dixon, **Pardis Emami-Naeini**, Hana Habib, Noah Johnson, and William Melicher. Design and Evaluation of a Data-Driven Password Meter. *In Proceedings of the 35th ACM Conference on Human Factors in Computing Systems (CHI '17)*.
- C1 Primal Pappachan, Martin Degeling, Roberto Yus, Anupam Das, Sruti Bhagavatula, William Melicher, **Pardis Emami-Naeini**, Shikun Zhang, Lujo Bauer, Alfred Kobsa, Sharad Mehrotra, Norman Sadeh, and Nalini Venkatasubramanian. Towards Privacy-Aware Smart Buildings: Capturing Communicating, and Enforcing Privacy Policies and Preferences. *In Proceedings of the 37th IEEE International Conference on Distributed Computing Systems Workshops (ICDCSW '17)*.

Posters

- P1 Noah Apthorpe, **Pardis Emami-Naeini**, Nick Feamster, and Marshini Chetty. You, Me, and IoT: How Internet-Connected Home Devices Affect Interpersonal Relationships. *In Proceedings of the 22nd ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW '19)*.

Talks and Presentations

- 2021 **People-Centric Smart Cities: Perspectives and Concerns**, *University of Washington, Security and Privacy Affiliates Workshop*.
- 2021 **Ethical Aspects of Security and Privacy Research. Overview of User-Centered Research Techniques**, *University of Denver, Ritchie School of Engineering and Computer Science*.
- 2021 **Designing an Informative and Usable Security and Privacy Label for IoT Devices**, *University of Illinois Urbana-Champaign, Responsible Data Science and AI Talk Series*.

- 2021 **The Journey to Design an Informative Privacy and Security 'Nutrition' Label for Smart Devices**, *Florida Institute of Technology, The Human Element in Autonomous Cyber Security Workshop*.
- 2021 **Understanding Privacy Attitudes and Concerns Towards Remote Communications During the COVID-19 Pandemic**, *SOUPS'21*.
- 2021 **Designing an IoT Privacy and Security Label**, *Semiconductor Research Corporation Webinar, Decadal Plan for Semiconductors: Measurable ICT Security and Privacy*.
- 2021 **Designing an IoT Privacy and Security Label**, *NIST IoT Labeling Effort*.
- 2021 **Which Privacy and Security Attributes Most Impact Consumers' Risk Perception and Willingness to Purchase IoT Devices?**, *PrivacyCon'21*.
- 2021 **Which Privacy and Security Attributes Most Impact Consumers' Risk Perception and Willingness to Purchase IoT Devices?**, *S&P'21*.
- 2021 **Privacy and Security Nutrition Labels to Inform IoT Consumers**, *Bace Cybersecurity Institute*.
- 2021 **Safe and Secure with IoT Nutrition Labels**, *USENIX Enigma*.
- 2020 **Informing Privacy and Security Decision-Making in an IoT World**, *The University of Maine*.
- 2020 **Ask the experts: What Should Be on an IoT Privacy and Security Label?**, *Energy Star, Smart Home Energy Management Systems (SHEMS) Pitch Party*.
- 2020 **Informing Privacy and Security Decision-Making in an IoT World**, *University of Illinois Urbana-Champaign*.
- 2020 **Ask the Experts: What Should Be on an IoT Privacy and Security Label?**, *PrivacyCon'20*.
- 2020 **Designing an IoT Privacy and Security Label**, *Cellular Telecommunications Industry Association (CTIA)*.
- 2020 **Ask the Experts: What Should Be on an IoT Privacy and Security Label?**, *S&P'20*.
- 2020 **Designing Usable and Informative Privacy and Security Labels for IoT Devices**, *IAPP Global Privacy Summit*.
- 2019 **Informing Privacy and Security Decision-Making in an IoT World**, *University of Massachusetts Amherst Rising Stars in CS Talk Series*.
- 2019 **Security and Privacy Nutrition Labels for IoT Devices**, *Carnegie Mellon University, CyLab Partners Conference*.
- 2019 **Privacy Enhancing Environmental Technology**, *Microsoft Research-Redmond*.
- 2019 **Exploring How Privacy and Security Factor into IoT Device Purchase Behavior**, *CHI'19*.
- 2018 **The Influence of Friends and Experts on Privacy Decision Making in IoT Scenarios**, *CSCW'18*.
- 2018 **"Erm... What do you think?" The Effect of the Crowd in Making Privacy Decisions**, *Intel Corporation-Santa Clara*.

- 2018 **Panelist on Consumer Preferences, Expectations, and Behaviors Session**, *PrivacyCon'18*.
- 2017 **Privacy Expectations and Preferences in an IoT World**, *SOUPS'17*.

Selected Teaching Experience

- 2019 **CS Teaching Assistant**, *Carnegie Mellon University*
CS 17-331: Information Security, Privacy, and Policy.
- 2019 **CS Teaching Assistant**, *Carnegie Mellon University*
CS 17-735: Engineering Privacy in Software.
- 2014 **CE Teaching Assistant**, *Sharif University of Technology*
Numerical Analysis.
- 2014 **CE Teaching Assistant**, *Sharif University of Technology*
Logic Design.
- 2013 **CE Teaching Assistant**, *Sharif University of Technology*
Electrical Circuits.
- 2012 **CE Teaching Assistant**, *Sharif University of Technology*
Fundamentals of Programming.

Professional Service

- 2022 **Program Committee Member**.
- IEEE Symposium on Security and Privacy (S&P)
 - USENIX Security Symposium
 - Privacy Enhancing Technologies Symposium (PETS)
 - ACM Conference on Computer-Supported Cooperative Work (CSCW)
- 2021 **Program Committee Member**.
- USENIX Security Symposium
 - ACM Conference on Computer-Supported Cooperative Work (CSCW)
 - European Symposium on Research in Computer Security (ESORICS)
 - ACM Conference on Computer and Communications Security (CCS), Posters and Demos
- 2020 **Program Committee Member**.
- International Conference on Intelligent User Interfaces (IUI)
 - International Conference on Advances in Computer-Human Interactions (ACHI)
- 2020 **Hiring Committee Member**.
- Faculty Hiring Committee, School of Computer Science, Carnegie Mellon University
 - Ph.D. Admissions Committee, School of Computer Science, Carnegie Mellon University
- 2019 **Conference Chair**.
- Workshop on “Ubiquitous Privacy: Research and Design for Mobile and IoT Platforms,” ACM Conference on Computer-Supported Cooperative Work (CSCW)
 - Session on “Accessible Content Creation,” ACM Conference on Human Factors in

Computing Systems (CHI)

2016–2021 **Invited Conference Reviewer.**

- USENIX Security Symposium
- Privacy Enhancing Technologies Symposium (PETS)
- ACM Conference on Human Factors in Computing Systems (CHI)
- ACM Conference on Computer-Supported Cooperative Work (CSCW)
- Network and Distributed System Security Symposium (NDSS)
- ACM Symposium on User Interface Software and Technology (UIST)
- ACM Conference on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)

2019–2020 **Invited Journal Reviewer.**

- ACM Transactions on Computer-Human Interaction (TOCHI)
- Journal of Computer Security (JCS)
- Communications of the ACM
- IEEE Access

Media Coverage

- 2021 **Vox**, *Your Echo Is Now Sharing Your Internet With Your Neighbors. Here's How To Opt Out..*
- 2021 **Consumers' Checkbook**, *Are You Sharing Your Wi-Fi with Amazon? If So, Should You Be Concerned?.*
- 2021 **TechXplore**, *CyLab's IoT Security And Privacy Label Effectively Conveys Risk, Study Finds.*
- 2021 **Consumer Reports**, *Connected Devices Share More Data Than Needed, Study Says.*
- 2021 **The Seattle Times**, *Zoom Bombings That Target Marginalized People Spark Demands For Legal Protections.*
- 2020 **The Wall Street Journal**, *Imagine A Nutrition Label—For Cybersecurity.*
- 2020 **WIRED**, *Apple's App 'Privacy Labels' Are Here—And They're A Big Step Forward.*
- 2020 **Consumer Reports**, *How To Use Apple's Privacy Labels For Apps.*
- 2020 **WIRED**, *IoT Security Is A Mess. Privacy 'Nutrition' Labels Could Help.*
- 2020 **BankInfoSecurity**, *Product Labels Could Make IoT Risks More Transparent.*
- 2020 **Podcast Digital Privacy**, *Episode 1: Digital Privacy With Pardis Emami Naeini.*
- 2020 **TechXplore**, *IoT Labels Will Help Consumers Figure Out Which Devices Are Spying On Them.*
- 2019 **TechXplore**, *Security And Privacy Rarely Considered Before Buying IoT Devices.*

Mentorship Experience

- 2020-Now **Miranda Wei**, *University of Washington.*
- 2020-Now **Janarth Dheenadhayalan**, *Carnegie Mellon University.*
- 2020-Now **Michelle Ling**, *Carnegie Mellon University.*

2020 **Tiona Francisco**, *University of Washington*.
2020 **Huilin Liu**, *Carnegie Mellon University*.
2020 **Ziyuan Zhu**, *Carnegie Mellon University*.
2019 **Shreyas Nagare**, *Carnegie Mellon University*.