

# Paul Yi Won Chung

me@pywc.dev  
https://paulchu.ng/  
1210 W Dayton St, Madison, WI 53706

## Education

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<b>University of California, San Diego</b> Ph.D. in Computer Science & Engineering Advisors: <i>Stefan Savage, Geoffrey Voelker</i>	09/2024 ~ Exp. 2029 La Jolla, CA
<b>University of Wisconsin-Madison</b> B.S. with Honors in Computer Sciences & Data Science Advisors: <i>Rahul Chatterjee, Kassem Fawaz</i> Thesis: "Characterizing Network Censorship Mechanisms Worldwide"	09/2020 ~ 05/2024 Madison, WI

## Publications

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- [1] Rishabh Khandelwal, Asmit Nayak, [Paul Chung](#), and Kassem Fawaz. "**Unpacking Privacy Labels: A Measurement and Developer Perspective on Google's Data Safety Section.**" *USENIX Security Symposium, 2024.*
  - [2] Marina Sanusi Bohuk, Mazharul Islam, [Paul Chung](#), Thomas Ristenpart, and Rahul Chatterjee. "**Araña: Discovering and Characterizing Password Guessing Attacks in Practice.**" *USENIX Security Symposium, 2023.*
  - [3] Rishabh Khandelwal, Asmit Nayak, [Paul Chung](#), and Kassem Fawaz. "**Comparing Privacy Labels of Applications in Android and iOS.**" *Workshop on Privacy in the Electronic Society (WPES), 2023.*
  - [4] [Yi Won Chung](#) and Tae Gyeom Heo. "**Exploitation of Bluekeep RDP Vulnerability on Embedded Systems and Possible Mitigations.**" *Conference on Information Security and Cryptography-Winter (CISC-W'), 2019.*
  - [5] Rishabh Khandelwal, [Paul Chung](#), Asmit Nayak, and Kassem Fawaz. "**Consistency of Self-reported Practices in Privacy Labels and Privacy Policies.**" *arXiv, 2024.*
  - [6] [Paul Chung](#) and Rahul Chatterjee. "**Shawshank Breakout: Uncovering State-of-the-Art Tactics Used by Network Censorship Systems.**" *Under Submission, 2024.*
  - [7] Maryam Aldairi, Arjun Brar, Hanan Hibshi, Kuixi Song, [Paul Yi Won Chung](#), Daniel Votipka, Marjan Salamati-Pour, and Akanksha Bubber. "**Is Sandboxing Enough? The Challenge of Engineering Privacy in iOS App Groups: A Developer Perspective.**" *Under Submission, 2024.*

## Talks

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- [1] [Paul Chung](#). "**Towards Identifying the Censorship Ruleset Patterns and Obscure Approaches.**" *UW-Madison Senior Honors Thesis Symposium, 2024.* Thesis Presentation.
  - [2] [Paul Chung](#). "**Comparing Privacy Labels of Applications in Android and iOS.**" *Workshop on Privacy in the Electronic Society (WPES), 2023 (co-located with CCS 2023).* Conference Talk.
  - [3] [Paul Chung](#). "**Introducing Adversarial Machine Learning to CTFs using a Ramped Difficulty Framework.**" *CMU REUSE, 2022.* Poster Presentation.
  - [4] [Yi Won Chung](#). "**Exploitation of Bluekeep RDP Vulnerability on Embedded Systems and Possible Mitigations.**" *Conference on Information Security and Cryptography-Winter (CISC-W'), 2019.* Poster Presentation.

## Awards

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- 2024 NSF Graduate Research Fellowship - Honorable Mention
- 2024 UC San Diego Jacobs School of Engineering Fellowship
- 2023 Barry M. Goldwater Scholarship
- 2023 Mark Mensink Honors Research Grant
- 2023 Hilldale Undergraduate Research Fellowship
- 2023 Max Planck Institute for Software Systems CMMRS Travel Grant (*NSF-funded*)
- 2022 CMU REUSE Undergraduate Research Fellowship (*NSF-funded*)
- 2022 National Cyber League Spring Team Game - Top 2% (as team: *Oxb4dgers*)
- 2019 Korea Ministry of Education CTF Competition - 5<sup>th</sup> Place (as team: *Future College Chancellor Shin Jinwoo*)

## Academic Service

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- SOUPS 2024 – Poster Jury

## Employment

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<b>University of Wisconsin-Madison – MadS&amp;P &amp; WI-PI</b> Undergraduate Research Assistant	Madison, WI 06/2021 ~ 05/2024
<b>UW-Madison Cybersecurity Operations Center</b> Cybersecurity Student Analyst Team Lead	Madison, WI 10/2020 ~ 05/2024
<b>MetaCTF</b> Content Developer	Remote 07/2023 ~ 08/2023
<b>Cybersecurity UW Student Club</b> President	Madison, WI 04/2021 ~ 05/2024
<b>Carnegie Mellon University – CyLab</b> Undergraduate Research Assistant	Pittsburgh, PA 05/2022 ~ 08/2022
<b>Igloo Security</b> Cybersecurity Intern Analyst	Seoul, South Korea 08/2019
<b>Daegu University – Information Security Institute</b> High School Research Assistant	Daegu, South Korea 01/2019 ~ 02/2020

## Projects

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<b>Usage of LLMs for Data Privacy Annotations</b> <i>UW-Madison Security &amp; Privacy Research Group (MadS&amp;P)</i> <ul style="list-style-type: none"><li>▪ Annotated over 500 Privacy Policies to the OPP-115 dataset</li><li>▪ Trained a Llama 2 model using AdaptLLM and mobile app privacy documents</li></ul>	10/2023 ~ Present Advisor: Kassem Fawaz
<b>Shawshank Intel: An Evasion-based Analysis of Network Censorship Tactics</b> <i>UW-Madison Security &amp; Privacy Research Group (MadS&amp;P)</i> <ul style="list-style-type: none"><li>▪ Formulated a heuristic-based approach for analyzing network censorship middleboxes</li><li>▪ Developed a middlebox measurement pipeline and tested it on networks under 207 ISPs</li></ul>	09/2022 ~ 04/2024 Advisor: Rahul Chatterjee

**Analysis of Google Data Safety Cards and Apple Privacy Labels***UW-Madison Security & Privacy Research Group (MadS&P)*

11/2022 ~ 11/2023

Advisor: Kassem Fawaz

- Analyzed over 2000 developer inquiry responses about data safety card inconsistencies
- Analyzed the privacy label consistencies of apps cross-listed on both platforms

**Engineering Privacy in iOS App Groups***Carnegie Mellon University Information Networking Institute (INI)*

05/2022 ~ 08/2022

Advisor: Hanan Hibshi

- Implemented a data leakage threat model for the iOS app group containers
- Analyzed the group containers for 200 iOS apps to detect potential data leakage

**picoCTF: Introducing Adversarial Machine Learning to CTFs***Carnegie Mellon University Security & Privacy Laboratory (CyLab)*

05/2022 ~ 08/2022

Advisor: Hanan Hibshi

- Developed five NLP and five CNN-based Adversarial Machine Learning challenges
- Introduced "ramped" difficulty system, optimized for beginning learners
- Contributed one Bag-of-words challenge to the 2023 IC3 Games, hosted by MetaCTF

**CookieEnforcer: Automated Cookie Notice Analysis and Enforcement***Wisconsin Privacy & Security Research Group (WI-PI)*

02/2022 ~ 07/2022

Advisor: Kassem Fawaz

- Explored the results of the user study for the CookieEnforcer research
- Developed a Chrome Extension that connects the CookieEnforcer backend
- Published the extension to the Chrome Extension Store

**Araña: Discovering and Characterizing Password Guessing Attacks in Practice***UW-Madison Security & Privacy Research Group (MadS&P)*

06/2021 ~ 10/2022

Advisor: Rahul Chatterjee

- Analyzed 30 million network packets to find a pattern of credential stuffing attacks
- Used Pandas and Matplotlib of Python to visualize and find edge cases from the data
- Found multiple patterns in the clustered data that exhibited anomalies

**Zero-day Vulnerability Analysis and Exploitation***Daegu University Information Security Institute*

03/2019 ~ 05/2020

Advisor: Chang Hoon Kim

- Analyzed the risk of CVE-2019-0708 (Bluekeep) on traditional embedded systems
- Designed a Proof of Concept to execute arbitrary code on a vulnerable system
- Poster presented the research as the primary author at *CISC-W' 2019*