QUINN BURKE

1210 W. Dayton St. ◊ Madison, WI 53706
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EDUCATION

University of Wisconsin-Madison Ph.D. in Computer Sciences Thesis Advisor: Prof. Patrick McDaniel	In progress
The Pennsylvania State University M.S. in Computer Science and Engineering Thesis Advisor: Prof. Patrick McDaniel <i>Thesis: Misreporting Attacks in Software-Defined Networking</i>	2020
The Pennsylvania State University B.S. in Computer Science	2018

PROFESSIONAL EXPERIENCE

Security and Privacy Research Group	08/2022–Present
Research Assistant	Madison, WI, USA
Systems and Internet Infrastructure Security Laboratory	01/2018–08/2022
Research Assistant	University Park, PA, USA
Capital One Financial Corporation	05/2018–08/2018
Software Engineering Intern	McLean, VA, USA
Penn State Applied Research Laboratory	12/2016–01/2018
Software Engineering Intern	University Park, PA, USA
JPMorgan Chase & Co.	05/2017–08/2017
Software Engineering Intern	Newark, DE, USA
Xerox Corporation	05/2016–08/2016
Software Engineering Intern	Rochester, NY, USA

PUBLICATIONS

- [1] **Quinn Burke**, Ryan Sheatsley, Yohan Beugin, Eric Pauley, Owen Hines, Michael Swift, and Patrick McDaniel. "Efficient Storage Integrity in Adversarial Settings". In: *2025 IEEE Symposium on Security and Privacy (SP)*. May 2025.
- [2] Quinn Burke, Ryan Sheatsley, Rachel King, Owen Hines, Michael Swift, and Patrick Mc-Daniel. "On Scalable Integrity Checking For Secure Cloud Disks". In: 23rd USENIX Conference on File and Storage Technologies (FAST '25). Feb. 2025.
- [3] Eric Pauley, Kyle Domico, Blaine Hoak, Ryan Sheatsley, **Quinn Burke**, Yohan Beugin, Engin Kirda, and Patrick McDaniel. "EIPSIM: Modeling Secure IP Address Allocation at Cloud Scale". In: *Network and Distributed Systems Security Symposium*. 2025.

- [4] **Quinn Burke**, Yohan Beugin, Blaine Hoak, Rachel King, Eric Pauley, Ryan Sheatsley, Mingli Yu, Ting He, Thomas La Porta, and Patrick McDaniel. "Securing Cloud File Systems with Trusted Execution". In: *IEEE Transactions on Dependable and Secure Computing* (2024). URL: https://arxiv.org/abs/2305.18639.
- [5] Rachel King, **Quinn Burke**, Yohan Beugin, Blaine Hoak, Kunyang Li, Eric Pauley, Ryan Sheatsley, and Patrick McDaniel. "ParTEETor: A System for Partial Deployments of TEEs within Tor". In: *Workshop on Privacy in the Electronic Society (WPES)*. 2024.
- [6] Yujin Nam, Rachel King, **Quinn Burke**, Minxuan Zhou, Patrick McDaniel, and Tajana Rosing. "Efficient Host Intrusion Detection using Hyperdimensional Computing". In: *Proceedings of the 2024 IEEE International Conference on Big Data Workshop on Cyber Threat Intelligence and Hunting*. IEEE, Dec. 2024.
- [7] Mingli Yu, **Quinn Burke**, Thomas La Porta, and Patrick McDaniel. "Stealthy Misreporting Attacks Against Load Balancing". In: *IEEE/ACM Transactions on Networking* (May 2024).
- [8] Alban Héon, Ryan Sheatsley, **Quinn Burke**, Blaine Hoak, Eric Pauley, Yohan Beugin, and Patrick McDaniel. *Systematic Evaluation of Geolocation Privacy Mechanisms*. 2023. URL: https://arxiv.org/abs/2309.06263.
- [9] Tian Xie, Sanchal Thakkar, Ting He, Patrick McDaniel, and **Quinn Burke**. "Joint caching and routing in cache networks with arbitrary topology". In: *IEEE Transactions on Parallel and Distributed Systems* (2023).
- [10] Mingli Yu, Quinn Burke, Thomas La Porta, and Patrick McDaniel. "mMLSnet: Multilevel Security Network With Mobility". In: MILCOM 2023-2023 IEEE Military Communications Conference (MILCOM). Oct. 2023.
- [11] Yohan Beugin, **Quinn Burke**, Blaine Hoak, Ryan Sheatsley, Eric Pauley, Gang Tan, Syed Rafiul Hussain, and Patrick McDaniel. "Building a Privacy-Preserving Smart Camera System". In: *Proceedings on Privacy Enhancing Technologies Symposium (PETS)*. July 2022.
- [12] Yohan Beugin, **Quinn Burke**, Blaine Hoak, Ryan Sheatsley, Eric Pauley, Gang Tan, Syed Rafiul Hussain, and Patrick McDaniel. *Privacy-Preserving Protocols for Smart Cameras and Other IoT Devices*. 2022. URL: https://arxiv.org/abs/2208.09776.
- [13] **Quinn Burke**, Fidan Mehmeti, Rahul George, Kyle Ostrowski, Trent Jaeger, Thomas La Porta, and Patrick McDaniel. "Enforcing Multilevel Security Policies in Unstable Networks". In: *IEEE Transactions on Network and Service Management* (2022).
- [14] Kyle Domico, Ryan Sheatsley, Yohan Beugin, **Quinn Burke**, and Patrick McDaniel. "A Machine Learning and Computer Vision Approach to Geomagnetic Storm Forecasting". In: *Machine Learning in Heliophysics (ML-Helio)*. Mar. 2022.
- [15] Eric Pauley, Ryan Sheatsley, Blaine Hoak, Quinn Burke, Yohan Beugin, and Patrick Mc-Daniel. "Measuring and Mitigating the Risk of IP Reuse on Public Clouds". In: 2022 IEEE Symposium on Security and Privacy (S&P). IEEE Computer Society, May 2022.
- [16] Tian Xie, Sanchal Thakkar, Ting He, Patrick Drew Mcdaniel, and **Quinn Burke**. "Joint Caching and Routing in Cache Networks with Arbitrary Topology". In: *Proceedings of the International Conference on Distributed Computing Systems (ICDCS)*. July 2022.

- [17] Stefan Achleitner, **Quinn Burke**, Patrick McDaniel, Trent Jaeger, Thomas La Porta, and Srikanth Krishnamurthy. "MLSNet: A Policy Complying Multilevel Security Framework for Software Defined Networking". In: *IEEE Transactions on Network and Service Management* 18.1 (Mar. 2021), pp. 729–744. ISSN: 1932-4537. DOI: 10.1109/TNSM.2020.3045998.
- [18] **Quinn Burke**, Patrick McDaniel, Thomas La Porta, Mingli Yu, and Ting He. "Misreporting Attacks Against Load Balancers in Software-Defined Networking". In: *Mobile Networks and Applications, Springer* (Dec. 2021).
- [19] Mingli Yu, Tian Xie, Ting He, Patrick McDaniel, and **Quinn Burke**. "Flow Table Security in SDN: Adversarial Reconnaissance and Intelligent Attacks". In: *IEEE/ACM Transactions on Networking* (Aug. 2021), pp. 1–14. ISSN: 1558-2566. DOI: 10.1109/TNET.2021.3099717.
- [20] **Quinn Burke**. *Misreporting Attacks in Software-Defined Networking*. Master's Thesis. The Pennsylvania State University, May 2020. URL: https://etda.libraries.psu.edu/files/ final_submissions/21551.
- [21] Quinn Burke, Patrick McDaniel, Thomas La Porta, Mingli Yu, and Ting He. "Misreporting Attacks in Software-Defined Networking". In: *International Conference on Security and Privacy in Communication Networks (SecureComm)*. Cham: Springer International Publishing, Oct. 2020, pp. 276–296. ISBN: 978-3-030-63086-7.
- [22] Mingli Yu, Ting He, Patrick McDaniel, and Quinn Burke. "Flow Table Security in SDN: Adversarial Reconnaissance and Intelligent Attacks". In: *IEEE INFOCOM 2020 IEEE Conference on Computer Communications*. ISSN: 2641-9874. July 2020, pp. 1519–1528. DOI: 10.1109/INF0C0M41043.2020.9155538.

PROFESSIONAL ACTIVITIES

Reviewer (Conferences)

IEEE Symposium on Security and Privacy 2022 (External Reviewer), 2023, 2024, 2025 (PC Member)

USENIX Security Symposium 2019, 2020, 2021, 2022 (External Reviewer)

ACM Conference on Computer and Communications Security (CCS) 2019, 2020, 2021 (External Reviewer)

ACM Symposium on Operating Systems Principles (SOSP) 2024 (AEC Member)

ACM EuroSys 2024 (Shadow PC Member)

IEEE Computer Security Foundations Symposium (CSF) 2021 (External Reviewer)

Annual International Conference on Mobile Computing and Networking (MobiCom) 2021 (External Reviewer)

ACM SIGCOMM Symposium on SDN Research (SOSR) 2021 (External Reviewer)

Reviewer (Journals)

International Journal of Information Security 2024

IEEE Transactions on Communications 2019

Invited Talks

Towards Scalable Integrity Mechanisms for Trusted Cloud Storage Systems UIUC Security Seminar, May 2024

Misreporting Attacks Against Load Balancers in Software-Defined Networking DEVCOM Army Research Laboratory, Nov. 2021

Teaching Experience

CMPSC311 - Introduction to Systems Programming, Teaching Assistant *Summer 2019, Spring 2020, Fall 2020, Fall 2021*

CSE597 - Emerging Trends in Computer Security, Teaching Assistant *Fall 2021*

CSE297 - Introduction to C Programming, Teaching Assistant *Fall 2021*

HONORS & AWARDS

Graduate Student Teaching Assistant Award, The Pennsylvania State University 2020