

# Academic Curriculum Vitæ

Ryan Scott Wails

April 2023

Citizenship      American  
Address            Information Technology Division  
                      U.S. Naval Research Laboratory  
                      4555 Overlook Ave SW, Code 5543  
                      Washington, D.C. 20375  
Email Address    ryan.wails@nrl.navy.mil

## **Education**

2019–Present    Ph.D. in Computer Science, Georgetown University (*In Progress*)  
                      Advisor:    Micah Sherr  
                      Area:        Computer and Network Security  
2019–2021        M.S. in Computer Science, Georgetown University  
2012–2016        B.S. in Computer Science, The Pennsylvania State University  
2012–2016        B.S. in Mathematics, The Pennsylvania State University

## **Professional Appointments**

- 2017–Present      Computer Scientist  
U.S. Naval Research Laboratory, Washington, D.C., USA  
Information Technology Division
- 2016–2017      Software Engineer  
Harris Corporation, Herndon, VA, USA  
(Under contract to the U.S. Naval Research Laboratory)
- 2014–2016      Undergraduate Researcher  
Penn State Applied Research Lab, University Park, PA, USA  
Intelligent Systems Division
- 2012–2014      Management Information Systems Technician  
Cambridge-Lee Industries LLC, Reading, PA, USA

## **Awards and Distinctions**

- 2023      “Co-opting Linux Processes for High-Performance Network Simulation” received the Alan Berman Annual Research Publication Award, which recognizes the best U.S. Naval Research Laboratory publications
- 2022      “Co-opting Linux Processes for High-Performance Network Simulation” received the Best Paper Award at the 2022 USENIX Annual Technical Conference
- 2021      Recipient of the National Science Foundation Graduate Research Fellowship
- 2021      “CLAPS: Client-Location-Aware Path Selection in Tor” received the Alan Berman Annual Research Publication Award, which recognizes the best U.S. Naval Research Laboratory publications
- 2015      Recipient of the Penn State Applied Research Laboratory Student Contribution Award

## Publications

### Refereed Conference Papers

1. Rob Jansen, Jim Newsome, and Ryan Wails. “Co-opting Linux Processes for High-Performance Network Simulation.” In: *USENIX ATC 2022: 2022 USENIX Annual Technical Conference*. Ed. by Jiri Schindler and Noa Zilberman. Carlsbad, CA, USA: USENIX Association, July 2022, pp. 327–350. URL: <https://www.usenix.org/conference/atc22/presentation/jansen>
2. Ryan Wails, Andrew Stange, Eliana Troper, Aylin Caliskan, Roger Dingledine, Rob Jansen, and Micah Sherr. “Learning to Behave: Improving Covert Channel Security with Behavior-Based Designs.” In: *Proceedings on Privacy Enhancing Technologies 2022.3* (July 2022), pp. 179–199. DOI: 10.56553/popets-2022-0068
3. Ryan Wails, Florentin Rochet, Aaron Johnson, Prateek Mittal, and Olivier Pereira. “CLAPS: Client-Location-Aware Path Selection in Tor.” In: *ACM CCS 2020: 27th Conference on Computer and Communications Security*. Ed. by Jay Ligatti, Xinming Ou, Jonathan Katz, and Giovanni Vigna. Virtual Event, USA: ACM Press, Nov. 2020, pp. 17–34. DOI: 10.1145/3372297.3417279
4. Ryan Wails, Aaron Johnson, Daniel Starin, Arkady Yerukhimovich, and S. Dov Gordon. “Stormy: Statistics in Tor by Measuring Securely.” In: *ACM CCS 2019: 26th Conference on Computer and Communications Security*. Ed. by Lorenzo Cavallaro, Johannes Kinder, XiaoFeng Wang, and Jonathan Katz. London, UK: ACM Press, Nov. 2019, pp. 615–632. DOI: 10.1145/3319535.3345650
5. Gerry Wan, Aaron Johnson, Ryan Wails, Sameer Wagh, and Prateek Mittal. “Guard Placement Attacks on Path Selection Algorithms for Tor.” In: *Proceedings on Privacy Enhancing Technologies 2019.4* (Oct. 2019), pp. 272–291. DOI: 10.2478/popets-2019-0069
6. Ryan Wails, Yixin Sun, Aaron Johnson, Mung Chiang, and Prateek Mittal. “Tempest: Temporal Dynamics in Anonymity Systems.” In: *Proceedings on Privacy Enhancing Technologies 2018.3* (July 2018), pp. 22–42. DOI: 10.1515/popets-2018-0019

## **Collaborators**

Aylin Caliskan (University of Washington), Mung Chiang (Princeton University), Roger Dingledine (The Tor Project), S. Dov Gordon (George Mason University), Rob Jansen (U.S. Naval Research Laboratory), Aaron Johnson (U.S. Naval Research Laboratory), Prateek Mittal (Princeton University), Jim Newsome (The Tor Project), Olivier Pereira (Université catholique de Louvain), Florentin Rochet (Université catholique de Louvain), Micah Sherr (Georgetown University), Andrew Stange (Carnegie Mellon University), Daniel Starin (Perspecta Labs), George Sullivan (University of California San Diego), Yixin Sun (Princeton University), Eliana Troper (Georgetown University), Sameer Wagh (Princeton University), Gerry Wan (Princeton University), Arkady Yerukhovich (George Washington University)

## **Talks**

1. “Learning to Behave: Improving Covert Channel Security with Behavior-Based Designs.” Presented at PETS 2022: The 22nd Privacy Enhancing Technologies Symposium, Sydney, NSW, AUS, July 2022.
2. “Location Aware Path Selection in Tor.” Presented at HotPETs 2020: The 13th Workshop on Hot Topics in Privacy Enhancing Technologies, Virtual Event, July 2020.
3. “Stormy: Statistics in Tor by Measuring Securely.” Presented at ACM CCS 2019: The 2019 ACM SIGSAC Conference on Computer and Communication Security, London, UK, November 2019.
4. “Stormy: Statistics in Tor by Measuring Securely.” Presented at The 15th Semi-Annual GU-CS Graduate Research Presentation Day, Georgetown University, Washington, D.C., USA, September 2019.
5. “Guard Placement Attacks on Path Selection Algorithms for Tor.” Presented at DCAPS: DC-Area Anonymity, Privacy, and Security Seminar, Georgetown University, Washington, D.C., USA, June 2019.
6. “Tempest: Temporal Dynamics in Anonymity Systems.” Presented at PETS 2018: The

18th Privacy Enhancing Technologies Symposium, Barcelona, CT, ESP, July 2018.

7. “Tunable Transparency: Secure Computation in the Tor Network.” Presented at DCAPS: DC-Area Anonymity, Privacy, and Security Seminar, Georgetown University, Washington, D.C., USA, June 2018.
8. “Tempest: Temporal Dynamics in Anonymity Systems.” Presented at DCAPS: DC-Area Anonymity, Privacy, and Security Seminar, University of Maryland, College Park, MD, USA, October 2017.

## **Academic Service**

### **Program Committee Member**

IEEE S&P 2024: IEEE Security and Privacy 2024

PETS 2024: The 24th Privacy Enhancing Technologies Symposium

PETS 2023: The 23rd Privacy Enhancing Technologies Symposium

USENIX Security 2021: The 30th USENIX Security Symposium

WPES 2020: The 19th ACM Workshop on Privacy in the Electronic Society

PETS 2019: The 19th Privacy Enhancing Technologies Symposium, Junior Member

### **External Reviewer**

USENIX Security 2020: The 29th USENIX Security Symposium

ACM Computing Surveys (2020)

PETS 2020: The 20th Privacy Enhancing Technologies Symposium

IEEE Communications Letters (2018)

PETS 2018: The 18th Privacy Enhancing Technologies Symposium

WPES 2017: The 2017 Workshop on Privacy in the Electronic Society

## Teaching Experience

Guest Presenter, *CSCI 6221: Advanced Software Paradigms*, George Washington University, 2022.

Guest Presenter, *CSCI 6221: Advanced Software Paradigms*, George Washington University, 2021.

Private Tutor, *C Programming, Algorithms and Data Structures*, 2019.

Undergraduate Student Project Mentor, Princeton University, 2019.

Substitute Lecturer, *IST 220: Networking and Telecommunications*, The Pennsylvania State University, 2016.

Substitute Lecturer, *CMPSC 122: Intermediate Programming*, The Pennsylvania State University, 2015.

Tutor, *Algorithms and Data Structures*, The Pennsylvania State University, 2015.

Substitute Lecturer, *CMPSC 221: Object-Oriented Programming*, The Pennsylvania State University, 2015.

Substitute Lecturer, *IST 220: Networking and Telecommunications*, The Pennsylvania State University, 2015.

Grader, *MATH 141: Calculus II*, The Pennsylvania State University, 2014.

Grader, *MATH 140: Calculus II*, The Pennsylvania State University, 2013.