

Lisa Oakley

Curriculum Vitae

Khoury College of Computer Sciences
Northeastern University
Boston, MA
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Research Interests: Formal Verification for Cybersecurity and Privacy, Differential Privacy, Robust Reinforcement Learning

Education

- Sept. 2020 – (exp. 2025) **PhD in Computer Science**, *Northeastern University*, Khoury College of Computer Sciences.
◦ Advisor: Alina Oprea
◦ GPA: 3.97
- Aug. 2022 **Master of Science in Computer Science**, *Northeastern University*, Khoury College of Computer Sciences.
◦ Selected coursework: Foundations of Probabilistic Programming. Formal Specification, Verification, and Synthesis. Machine Learning Security and Privacy. Privacy in Statistics and Machine Learning.
◦ GPA: 3.97
- Dec. 2018 **Bachelor of Science in Mathematics and Computer Science**, *Northeastern University*, Khoury College of Computer Sciences.
◦ *summa cum laude* (highest honors)

Research Experience

- June 2022 – present **Quant Research Intern**, *Proof Trading, Inc.*.
◦ Advisor: Allison Bishop
- Sept. 2018 – present **Research Assistant**, *Northeastern University*, Khoury College of Computer Sciences.
◦ Advisors: Alina Oprea and Stavros Tripakis

Publications

Conference Papers

- 2024 **Defining and Controlling Information Leakage in US Equities Trading.**
Arthur Américo, Allison Bishop, Paul Cesaretti, Garrison Grogan, Adam McKoy, Robert Moss, **Lisa Oakley**, Marcel Ribeiro, Mohammad Shokri
In *24th Proceedings on Privacy Enhancing Technologies*, (PoPETs '24).
<https://eprint.iacr.org/2023/971>
- 2022 **Adversarial Robustness Verification and Attack Synthesis in Stochastic Systems.**
Lisa Oakley, Alina Oprea, and Stavros Tripakis
In *35th IEEE Computer Security Foundations Symposium*, (CSF'22, FLoC'22) 2022.
<https://arxiv.org/abs/2110.02125>
- 2019 **QFlip: An Adaptive Reinforcement Learning Strategy for the FlipIt Security Game.**
Outstanding Student Paper Award
Lisa Oakley and Alina Oprea
In *10th Proceedings of the Conference on Decision and Game Theory for Security*, (GameSec'19) Stockholm, Sweden, 2019.
https://link.springer.com/chapter/10.1007/978-3-030-32430-8_22

Workshop Papers and Presentations

- 2023 **Defining and Controlling Information Leakage in US Equities Trading.**
Arthur Américo, Allison Bishop, Paul Cesaretti, Garrison Grogan, Adam McKoy, Robert Moss, **Lisa Oakley**, Marcel Ribeiro, Mohammad Shokri
Poster at *Theory and Practice of Differential Privacy (TPDP)*, 2023.
- 2020 **Adversarial Robustness of AI Agents Acting in Probabilistic Environments.**
Lisa Oakley, Alina Oprea, and Stavros Tripakis
Workshop on Foundations of Computer Security (Affiliated with *Computer Security Foundations Symposium*), 2020.
<http://www.ccs.neu.edu/~stavros/papers/2020-fcs.pdf>

Other Presentations

Posters

- 2022 **Model Checking Adversarial Robustness in Stochastic Systems.**
Lisa Oakley, Alina Oprea, and Stavros Tripakis
CRA-WP Grad Cohort for Women, 2022.
- 2019 **Reinforcement Learning Techniques to Increase Intrusion Resilience in Game Theoretical APT Models.**
Lisa Oakley and Alina Oprea
NSF Secure and Trustworthy Cyberspace PI Meeting, 2019.

Other Talks

- 2023 **Differential Privacy Verification.**
Lisa Oakley
Northeastern University Software Day, 2023.
- 2019 **Game Theoretical Modeling and Reinforcement Learning Techniques for Cybersecurity.**
Lisa Oakley
Northeastern University Math Club, 2019.
- 2019 **Diversity in Tech Panel.**
Lisa Oakley
Northeastern University Women in Technology and Multi-Diverse Unified Leaders in the Technology Industry, 2019.

Teaching Experience

- Fall 2022, **Graduate Teaching Assistant**, *Northeastern University*.
- Spring 2023
 - Spring 2023: Logic and Computation (CS2800). Instructor: Daniel Patterson.
 - Fall 2022: Logic and Computation (CS2800). Instructor: Stavros Tripakis.
- Spring 2017, **Undergraduate Teaching Assistant**, *Northeastern University*.
- Spring 2018,
 - Fall 2018: Algorithms and Data Structures (CS3000). Instructor: Jon Ullman.
- Fall 2018
 - Spring 2018: Algorithms and Data Structures (CS3000). Instructor: Huy Nguyen.
 - Spring 2017: Logic and Computation (CS2800). Instructors: Pete Manolios, Thomas Wahl, and David Sprague.

Awards and Honors

- 2023 **Student Stipend**, *High Assurance Crypto Systems (HACS) Workshop '23*.
- 2023 **Student Stipend**, *Real World Crypto (RWC) '23*.
- 2023 **Student Volunteer**, *Principles of Programming Languages (POPL) '23*.
- 2022 **Northeastern Google Fellowship Nominee**, *Northeastern University*.
- 2022 **CRA-WP Grad Cohort for Women**, *CRA-WP Grad Cohort for Women '22*.
- 2021 **USENIX Diversity Grant**, *USENIX Security '21*.
- 2021 **GREPSEC Workshop Attendee**, *GREPSEC Workshop, USENIX Security '21*.

- 2019 **Outstanding Student Paper Award**, *GameSec '19*.
- 2018 **summa cum laude**, *Khoury College of Computer Sciences, Northeastern University*.
- 2015–2018 **Merit Scholarship**, *Northeastern University*.
- 2015–2018 **Dean's List**, *Northeastern University*.
- 2013–2015 **Dean's List, President's List**, *California Polytechnic State University, SLO*.
- 2013–2015 **Italian Catholic Federation Merit Scholarship**, *Italian Catholic Federation*.
- 2013 **California Scholarship Federation Lifetime Member**, *California Scholarship Federation*.
- 2013 **Kiwanis Merit Scholarship**, *Kiwanis*.
- 2013 **Sons of Italy Merit Scholarship**, *Sons of Italy*.

Software Engineering Experience

- June – Aug. **Software Engineering Intern**, *VMWare Tanzu Greenplum*, Palo Alto, CA.
 - 2018 ○ Member of Infrastructure team for distributed Postgres database
- July – Dec. **Software Engineering Co-Op**, *VMWare Tanzu*, New York, NY.
 - 2017 ○ Windows team for cloud platforms software (Google Cloud, AWS, Microsoft Azure, VMWare On-Prem)
- July – Dec. **Quality Assurance Engineering Co-Op**, *Runkeeper (Asics Digital)*, Boston, MA.
 - 2016 ○ Mobile app wearables team (Garmin, Apple Watch, Android Watch, Pebble, iOS, Android OS)

Other Activities

- 2020-present **Organizer**, *Khoury PhD Women Group*.
- 2020-2021 **Member**, *Northeastern University Accountable Algorithms Reading Group*.
- 2019-2020 **Volunteer**, *Y2Y Youth Shelter (Cambridge, MA), Rosie's Place Womens' Shelter (Boston, MA)*.
- 2018-2020 **Cast Member**, *ImprovBoston All Access Improv Comedy Show*.
- 2015-2018 **Vice President, Member**, *Northeastern University Math Club*.
- 2015-2018 **Member**, *Northeastern University Women in Technology Club*.
- 2015-2017 **Member**, *NU & Improv'd (Northeastern University Improv Comedy Troupe)*.
- 2014-2015 **Volunteer**, *Habitat for Humanity ReStore (San Luis Obispo, CA)*.
- 2011-2012 **Sponsorship Chair**, *Justin-Siena High School Relay for Life (American Cancer Society)*.