

Miti Mazmudar

Assistant Professor

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Research areas: Security and Privacy, Privacy-enhancing technologies, privacy engineering, usable security and privacy.

Education

- 2019 – 2025 **Ph D. in Computer Science.**
University of Waterloo, Canada. Supervisor: Ian Goldberg
Dissertation: Realizing privacy design strategies for the agile web.
- 2016 – 2019 **Masters of Mathematics (Computer Science).**
University of Waterloo, Canada. Supervisor: Ian Goldberg
Thesis: Mitigator: Privacy policy compliance using Intel SGX.
- 2012 – 2016 **B. Tech. in Information Communication Technology (ICT).**
Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT).
Gandhinagar, India.

Publications

- IEEE S&P 2025 **Peer2PIR: Private queries for IPFS.**
Miti Mazmudar, Shannon Veitch, Rasoul Akhavan Mahdavi.
<https://arxiv.org/abs/2405.17307>.
- VLDB 2023 **Cache Me If You Can: Accuracy-Aware Inference Engine for Differentially Private Data Exploration.**
Miti Mazmudar, Thomas Humphries, Jiaxiang Liu, Matthew Rafuse, Xi He.
<https://www.vldb.org/pvldb/vol16/p574-mazmudar.pdf>.
- USENIX Security 2022 **Caring about Sharing: User Perceptions of Multiparty Data Sharing.**
Bailey Kacsmar, Kyle Tilbury, Miti Mazmudar, Florian Kerschbaum.
<https://www.usenix.org/conference/usenixsecurity22/presentation/kacsmar>.
- WPES 2021 **Do you feel a chill? Using PIR against chilling effects for censorship-resistant publishing.**
Miti Mazmudar, Stan Gurtler, Ian Goldberg.
<https://dl.acm.org/doi/10.1145/3463676.3485612>.
- PoPETs 2020 **Mitigator: Privacy policy compliance using trusted hardware.**
Miti Mazmudar, Ian Goldberg.
<https://doi.org/10.2478/popets-2020-0049>.
- Received media coverage in [ACM TechNews](#), [Engadget](#), [TechLinked](#), [Waterloo News](#).

Teaching Experience

- 05/21–08/21 **Computer Security and Privacy (co-taught with N. Asokan).** *UWaterloo.*
- Significantly revised and redesigned course modules: Produced 3 hours of lecture videos for network, database security and privacy-enhancing technologies. Designed 70 corresponding quiz questions.
 - Held 5 online synchronous sessions that included micro-lectures and small-group activities. Guided students in weekly office hours.

- Co-ordinated 9 TAs through 3 assignment tasks, for a class of 140.
- Six academic terms. **Computer Security and Privacy (TA).** *09/16–12/16. 05/17–08/17. 05/19–08/19. 05/20–08/20. 01/21–04/21. 05/22–08/22. .*
 - Designed new written assignment questions. Held weekly office hours.
 - Assisted transitioning the course to an online setup through sysadmin tasks.
 - Marked assignments, midterms and finals.
- 01/16–05/16 **System Software (TA).** *DA-IICT.*
 - Conducted programming labs (3 hours), including a whiteboard recitation. Helped students debug code and graded their progress.
 - Marked midterms and finals.
- 07/15–12/15 **Computer Networks (TA).** *DA-IICT.*
 - Designed and conducted a programming lab session on DHCP.

Teaching Qualifications

- 01/20 – 12/22 **Certificate in University Teaching (CUT).** *University of Waterloo, Canada.*
- 09/16 – 09/19 **Fundamentals of University Teaching (FUT).** *University of Waterloo, Canada.*

Service

- 2025–2026 *Artifact committee co-chair:* Privacy Enhancing Technologies Symposium (PETS)
 - Added an intermediate badge to the PETS artifact badge model, so that it is similar to that of USENIX Security. Improved the artifact review process based on survey results.
- 2024 Organizing two sessions of the [CrySP Speaker Series on Privacy](#).
- 2021–2024 *Artifact committee reviewer:* Privacy Enhancing Technologies Symposium (PETS)
- 2023 *Session chair:* Very Large Databases (VLDB): Private Retrieval & Secure Execution II
- 2023 *External reviewer:* Privacy Enhancing Technologies Symposium (PETS)
- 2022 *Research collaboration setup:* Presented recent research published by our group to the Data Science Division in Statistics Canada, as a part of a research collaboration meeting.

Awards and Grants

- 01/23 – 12/23 **Protocol Labs Grant for RFP-014 on Retrieval of Data (150k USD):** Received a one year research grant to cover expenses for three students, to develop Peer2PIR, which extends DHTPIR (our WPES 2021 paper) for the Interplanetary File System (IPFS).
- 09/20 – 04/21 Barbara Hayes-Roth Award for Women in Math and Computer Science
- 01/19 – 12/19 University of Waterloo Provost Doctoral Entrance Award for Women
- 09/16 – 08/17 University of Waterloo Graduate Excellence Scholarship

Talks

- 07/25 **Peer2PIR: Private Queries for IPFS.**
(Research) *Private Computing Tech Talk, Google Research NY.*
Invited talk on our paper, Peer2PIR.
- 05/25 **Bringing our PETs to practice: Integrating Privacy-Enhancing Technologies into centralized and distributed web architectures.**
(Research) *Security Research Lab, University of California Santa Cruz.*
Invited talk on an overview of my research.

- 05/25 **Bringing our PETs to practice: Integrating Privacy-Enhancing Technologies into centralized and distributed web architectures.**
(Research) *Visa Research Security Seminar.*
Invited talk on an overview of my research.
- 07/24 **Peer2PIR: Private Queries for IPFS.**
(Research) *Stanford Security Lunch Seminar.*
Invited talk on our paper, Peer2PIR.
- 10/23 **Prose: A Privacy Observability Framework for Data Minimization.**
(Research) *Electronic Privacy Information Center.*
Applications of our upcoming work, Prose, for data protection authorities.
- 08/23 **Exploring network security using Netsim.**
(Outreach) *Summer Conference for CS Educators (Centre for Education in Math and Computing).*
Pedagogy workshop discussing how our network simulator game, *Netsim*, can be integrated into high-school classrooms, to teach fundamental security concepts.
- 01/23, 11/20, **An introduction to network security.**
05/19, 05/18, *Events: WicsCon (2023), CSGirlsRock (2020, 2019), Seeing Possibilities and Rewards in Computer Science (2018, 2017).*
05/17
(Outreach) Conducted a network security workshop using Netsim to encourage high-school girls and women in undergraduate programs to consider Computer Science and Cybersecurity as potential career paths.
- 11/22 **Integrating Private Information Retrieval into IPFS.**
(Research) *CryptoNet Research Group Seminar, Protocol Labs.*
Presented a research talk on DHTPIR and our work-in-progress design for Peer2PIR.
- 10/22 **Integrating Private Information Retrieval into IPFS.**
(Research) *IPFS Camp.*
Presented a research talk on DHTPIR at the annual IPFS conference.
- 04/22 **The Best Flip: Student-Focused Designs for Online Flipped Classrooms.**
(Teaching) *University of Waterloo Teaching and Learning Conference.* Waterloo.
Presented my educational research project on online flipped classrooms.
- 12/21 **Do You Feel a Chill? Using PIR Against Chilling Effects for Censorship-resistant Publishing.**
(Research) *MIT CSAIL Seminar.*
Invited talk on our DHTPIR paper.
- 02/20 **Mitigator: Privacy policy compliance using Intel SGX.**
(Research) *Privacy, Infrastructures, Policy conference.* Waterloo.
A microtalk on my privacy policy compliance paper, Mitigator.
- 09/19 **How to make an app that is not a privacy horrorshow.**
(Outreach) *Citizen Hacks Privacy Hackathon.* Toronto.
Mentored students to develop innovative privacy-focused web services at a youth-run privacy design hackathon. Presented a workshop talk on privacy-enhancing technologies in practice using IRMA attribute-based credentials.
- 12/17 **Starcon 2018 Hackathon.**
(Outreach) Reviewed a student's proposal for a lightning talk and provided constructive feedback.

Work Experience

- 05/24 – 08/24 Snowflake Inc. Internship
- Differential Privacy (DP) feature: enables an admin in one organization to share their users' data under a differential privacy policy with analysts in another organization.
 - Designed a table function to compute the number of queries that can be run by an analyst on a given table or view.

- Developed unit, integration and regression tests to test compatibility of feature with other Snowflake features such as data shares.
- Security review and threat modelling to control information disclosure to analysts.
- Parameter protection to facilitate controlled deployment of the feature.

09/20 – 12/20 [NYCML & Consumer Reports Consumer Data & Privacy Prototyping](#): Fall 2020 Open Challenge Finalist Team

- Designing a prototype browser extension for *Mitigator* to check the compliance of websites with their privacy policies.
- Delivering pitch presentations to NYCML and CR leadership teams.