Bailey Kacsmar

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Academic Background

Post-Secondary Education

- **PhD, University of Waterloo** Waterloo, Ontario
  in Computer Science *2018 - Present*
  - Supervisor: Florian Kerschbaum
  - Thesis: Perceptions and Practicalities for Private Machine Learning

- **MMath, University of Waterloo** Waterloo, Ontario
  in Computer Science *2016 - 2018*
  - Supervisor: Doug Stinson
  - Thesis: Designing Efficient Algorithms for Combinatorial Repairable Threshold Schemes

- **BSc (Honours), Brandon University** Brandon, Manitoba
  Majors in Computer Science and Philosophy, Minor in Mathematics *2011 - 2016*
  - Graduated with "Greatest Distinction"
  - "Silver Medal in Philosophy" for highest GPA among philosophy majors

Co-Curricular Professional Development

- **Certificate in University Teaching** Waterloo, Ontario
  Through the University of Waterloo's Centre for Teaching Excellence *2021*

- **Certificate in Student Leadership** Waterloo, Ontario
  Through the University of Waterloo's Student Success Office *2018*

- **Certificate in Fundamentals of University Teaching** Waterloo, Ontario
  Through the University of Waterloo's Centre for Teaching Excellence *2017*

Publications and Research Talks

Peer-Reviewed Publications

- **Bailey Kacsmar**, Kyle Tilbury, Miti Mazmudar, Florian Kerschbaum. Caring about Sharing: User Perceptions of Multiparty Data Sharing. The 31st USENIX Security Symposium (USENIX Security 2022). Accepted.

- **Bailey Kacsmar**, Chelsea H. Komlo, Florian Kerschbaum, Ian Goldberg. (2020). Mind the Gap: Ceremonies for Applied Secret Sharing. Proceedings on Privacy Enhancing Technologies, 2020(2), pages 397-415.

- Rasoul Akhavan Mahdavi, Thomas Humphries, **Bailey Kacsmar**, Simeon Krastnikov, Nils Lukas, John Premkumar, Masoumeh Shafieinejad, Simon Oya, Florian Kerschbaum, Erik-Oliver Blass. Practical Over-Threshold Multi-Party Private Set Intersection. Annual Computer Security Applications Conference (ACSAC 2020), pages 772-783.

- **Bailey Kacsmar**, Basit Khurram, Nils Lukas, Alexander Norton, Masoumeh Shafieinejad, Zhiwei Shang, Yasser Baseri, Maryam Sepehri, Simon Oya, and Florian Kerschbaum. Differentially Private Two-Party Set Operations. The 5th IEEE European Symposium on Security and Privacy 2020. (EuroS&P), pages 390-404.

- **Bailey Kacsmar** and Douglas R. Stinson. A Network Reliability Approach to the Analysis of Combinatorial Repairable Threshold Schemes. Advances in Mathematics of Communications, 13-4 (2019), pages 601-612.

- Chenkuan Li, Changpin Li, **Bailey Kacsmar**, Roque Lacroix and Kyle Tilbury. The Abel integral equations in distribution, Advances in Analysis, 2 (2017), pages 88-104.

- **Bailey Kacsmar**, Sarah Plosker, Ryan Henry. Computing Low-Weight Discrete Logarithms, The 24th Annual Conference on Selected Areas in Cryptography (SAC 2017), Volume 10719 of LNCS, pages 106-126.

Conference Presentations without Proceedings

- "State-Level Secrets: When Theory Meets Practice for Journalists Working with Encrypted Documents", Real World Crypto 2019, San Jose, California, United States. (January 2019). Co-presenter: Chelsea Komlo

Poster Presentations and Extended Abstracts

- **Bailey Kacsmar**, Kyle Tilbury, Miti Mazmudar, Florian Kerschbaum. Caring about Sharing: User Perceptions of Multiparty Data Sharing. SOUPS 2022, Boston, Massachusetts.

- **Bailey Kacsmar**, Sarah Plosker, Ryan Henry *Computing Low-Weight Discrete Logarithms*, Second Annual Canadian Celebration of Women in Computing (2017), Montreal, Quebec

- Ryan Henry, **Bailey Kacsmar**, and Sarah Plosker: Computing Low-Weight Discrete Logarithms. Extended abstract at the 1st International Workshop on Mathematical Methods for Cryptography (MMC 2017), Svolvær-Lofoten, Norway (September 2017).

Other Research Experience

- The 2018 Program for Women and Mathematics: Mathematics of Modern Cryptography, Institute for Advanced Study, Princeton, New Jersey, May 19-26, 2018.

Honours & Awards

PETs Travel Stipend ($3,210), Privacy Enhancing Technology Symposium 2022
Alexander Graham Bell Canada Graduate Scholarship (CGS-D$_3$) ($105,000), NSERC 2019-2022
President's Graduate Scholarship ($30,000), University of Waterloo 2019-2022
David R. Cheriton Graduate Scholarship ($20,000), University of Waterloo 2018-2019
Provost Doctoral Entrance Award for Women ($5,000), University of Waterloo 2018
SAC Travel Stipend ($527), Selected Areas of Cryptography Conference 2017
University of Waterloo Entrance Scholarship ($4,000), University of Waterloo 2016
Karl Popper Scholarship in Philosophy ($1,985), Brandon University 2016
Queen Elizabeth II Scholarship (~~$10,800~~), University of Calgary 2016
Inducted into the Brandon University Honour Society, Brandon University 2015
Placed on the Dean's Honour List, Brandon University 2015
President's Leadership Scholarship (Full Tuition: $3,152.94), Brandon University 2015
Harold Vidal Memorial Scholarships in the Humanities ($1,500), Brandon University 2014,2015

R. Murray Simmons Scholarship in Humanities ($575), Brandon University 2015
Placed on the Honours List, Brandon University, Brandon University 2011, 2012, 2013, 2014
Brandon College Class of '50 Millennium Scholarship ($600), Brandon University 2013
Dr. W.N Hargreaves-Mawdsley Third Year Scholarship ($500), Brandon University 2013
John Odin Scholarship, Brandon University ($770) 2013
Adam Sus Bursary in Computer Science ($2,450), Brandon University 2012
Inducted into the Presidents Honour Society, Brandon University 2011, 2013
Brandon University Board of Governors Entrance Scholarship ($1,400), Brandon University . . . 2011

Academic Service

Program Committee

- Privacy Enhancing Technologies Symposium (PoPETs) 2023

Co-Chair (Artifact Committee):

- Privacy Enhancing Technologies Symposium (PoPETs) 2022, 2023

Invited/External Reviewer:

- Privacy Enhancing Technologies Symposium (PoPETs) 2021, 2022

- Journal of Privacy and Confidentiality (JPC), 2022

- Innovation and Technology in Computer Science Education (ACM ITiCSE), 2022

Artifact Committee:

- Privacy Enhancing Technologies Symposium (PoPETs) 2021

Teaching Experience

Teaching Assistant   Waterloo, Ontario
University of Waterloo   *2016 - 2021*

- CS490 Information Systems Management (Winter '17, Winter '21)

- CS458/658 Computer Security and Privacy (Spring '17, Fall '17, Winter '18, Spring '18, Fall '18, Winter '20)

- CS135 Designing Functional Programs (Fall '16)

Guest Lecturer   Waterloo, Ontario
University of Waterloo   *2017, 2021*

- CS458/658 Computer Security and Privacy (Winter '21)
  Lecture Topic: Ethics

- CS458/658 Computer Security and Privacy (Winter '21)
  Lecture Topic: Address Resolution Protocol (ARP) Cache Posinoing Attacks

- CS490 Information Systems Management (Winter '17)
  Lecture Topic: Introduction to Business Process Improvement Methodologies

Teaching Assistant   Brandon, Manitoba
Brandon University   *2013 - 2016*

- 62.206 Discrete Structures and Programming (Winter '15, Fall '15, Winter '16)

- 70:163 Critical Thinking (Winter '16)

- 62:182 Linear Algebra (Winter '13, Fall '13, Winter '14, Fall '14, Winter '15, Fall '15, Winter '16)

- 70:162 Introduction to Logic (Fall '14, Fall '15)

Community Service and Outreach

Youth Outreach
Focus on technology and entrepreneurial skills

- **Technovation Girls Waterloo** — Waterloo, Ontario
  Volunteer and coding coach throughout the season — *2018, 2019, 2020, 2022*

- **Girls Mean Business** — Waterloo, Ontario
  Co-facilitator with Miti Mazmudar, online workshop on Network Security — *2020*

- **CEMC Workshop in Computer Science for Young Women** — Waterloo, Ontario
  Co-facilitator with Miti Mazmudar, session on Network Privacy and Security — *2019*

- **Volunteer at GIRLsmarts4tech** — Waterloo, Ontario
  Assist participants following the tutorial in MIT App Inventor — *2018*

- **Guest Presenter, Cryptography, Security, and Privacy** — Waterloo, Ontario
  For the Junior Achievement in the Waterloo Region Advanced Camp — *2017*

Undergraduate Outreach
Industry and Academia

- **Guest Speaker, KW (Kitchener-Waterloo) Security Meetup** — Waterloo, Ontario
  Presentation on privacy and data science to community group — *2022*

- **Mentor at Ladies Who L(a)unch** — Waterloo, Ontario
  Speed networking luncheon presented by Women in Math (WiM) Committee — *2019*

- **Mentor for StarCon Software Engineering Conference** — Waterloo, Ontario
  Provide feedback and advice to first time presenters preparing their talks — *2017*

- **Mentor, Women in Computer Science (WICS) Speed Mentoring** — Waterloo, Ontario
  A mentoring event for undergraduate women in computer science — *2017*

- **Mentor, Women in Computer Science (WICS) Dinner with the Profs** Waterloo, Ontario
  An opportunity for undergraduates to speak with professors and graduate students — *2017*
  in a casual setting