Matthew Regehr

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Education

University of Waterloo	September 2023–Present
PhD in Computer Science	*Waterloo, ON*
University of Waterloo	September 2021–August 2023
Master of Mathematics in Computer Science	*Waterloo, ON*
University of Alberta	September 2017–June 2021
Bachelor of Science with Honors in Computing Science	*Edmonton, AB*
Three Hills High School	September 2015–June 2017
Diploma	*Three Hills, AB*

By taking on a heavier course load, I was able to graduate in two years.

Research Experience

PhD Research Assistant   September 2023–Present
University of Waterloo   *Waterloo, ON*

I am advised by Gautam Kamath. My research focuses on the theory of privacy accounting.

MMath Research Assistant   September 2021–August 2023
University of Waterloo   *Waterloo, ON*

I was co-advised by Gautam Kamath and Shai Ben-David. I wrote my thesis on private statistical estimation.

NSERC Undergraduate Student Research Assistant   May 2021–August 2021
University of Alberta   *Edmonton, AB*

I collaborated with Csaba Szepesvari's group to prove hardness results for reinforcement learning in the partially observable setting. I also worked with another of his students to write a manuscript on the convergence of Q-learning.

NSERC Undergraduate Student Research Assistant   May 2020–December 2020
University of Alberta   *Edmonton, AB*

I worked in the the Reinforcement Learning and Artificial Intelligence lab under Martha White's supervision. I wrote a report on the theoretical properties of reinforcement learning algorithms in a partially observable environment and worked with a team to empirically evaluate their effectiveness.

Alberta Innovates Summer Research Assistant   May 2019–August 2019
University of Alberta   *Edmonton, AB*

I was advised by Kumaradevan Punithakumar in the Servier Virtual Cardiac Centre. I developed a machine learning algorithm to automatically delineate the right atrial contour from MR images of the heart. I presented a paper on the technique at ISBI 2020.

Teaching and Instructional Assistantships

CS 240: Data Structures and Data Management	May '22–August '22, January '23–April '25
University of Waterloo	*Waterloo, ON*
CS 485/685: Foundations of Machine Learning	September 2022–December 2022
University of Waterloo	*Waterloo, ON*
CS 135: Designing Functional Programs	January 2022–April 2022
University of Waterloo	*Waterloo, ON*
CS 116: Introduction to Computer Science 2	September 2021–December 2021
University of Waterloo	*Waterloo, ON*

MATH 154: Calculus for Business and Economics I　　　　　　　January 2020–April 2020
University of Alberta　　　　　　　　　　　　　　　　　　　　　　*Edmonton, AB*

Publications and Manuscripts

Query-Efficient Locally Private Hypothesis Selection via the Scheffé Graph　　　2025
Gautam Kamath, Alireza F. Pour, Matthew Regehr, David Woodruff　　　　　*(Alphabetical)*
To appear in NeurIPS 2025
ArXiv preprint: https://arxiv.org/abs/2509.16180

Pitfalls for Privacy Accounting of Subsampled Mechanisms under Composition　　2024
Christian Lebeda*, Matthew Regehr*, Gautam Kamath, Thomas Steinke　　*(*Alphabetical)*
Published in SaTML 2025
ArXiv preprint: https://arxiv.org/abs/2405.20769

A Bias-Variance-Privacy Trilemma for Statistical Estimation　　　　　　　　2023
Gautam Kamath, Argyris Mouzakis, Matthew Regehr, Vikrant Singhal, Thomas Steinke, Jon Ullman　　*(Alphabetical)*
Published in the Journal of the American Statistical Association
ArXiv preprint: https://arxiv.org/abs/2301.13334

An Elementary Proof that Q-learning Converges Almost Surely　　　　　　　2021
Matthew Regehr, Alex Ayoub
ArXiv preprint: https://arxiv.org/abs/2108.02827

Automatic Right Atrial Segmentation from Magnetic Resonance Imaging　　　2019
Matthew Regehr, Andrew Volk, Michelle Noga, Kumaradevan Punithakumar
Published in 17th IEEE International Symposium on Biomedical Imaging (ISBI 2020)
Presented at University of Alberta Faculty of Medicine & Dentistry 52nd Annual Summer Students' Research Day
　　Won best poster prize

Work Experience

Software Engineering Intern　　　　　　　　　　　　　　　June 2025–August 2025
Google　　　　　　　　　　　　　　　　　　　　　　　　　*Mountain View, CA*
I interned at Google Research. My main project focused on the theory of privacy budgeting for machine learning.

Web Developer　　　　　　　　　　　　　　　　　　　　October 2016–Present
Kneehill Regional Family and Community Support Services　　　　　　　*Three Hills, AB*
I developed an online volunteering platform as well as a website providing resources to local families and young parents.

Web Developer　　　　　　　　　　　　　　　　　　　　　March 2016–Present
Bermuda King　　　　　　　　　　　　　　　　　　　　　　*Kingfisher, OK*
I redesigned and extended the capabilities of the client's existing website, which I still regularly maintain today.

Web Developer　　　　　　　　　　　　　　　　　　　　June 2018–August 2018
Altawest Services　　　　　　　　　　　　　　　　　　　　　*Three Hills, AB*
I implemented a modern, responsive website redesign and helped the client update and expand their online presence.

Selected Awards

NSERC Canada Graduate Scholarship–Doctoral　　　　　　　　　　　2024–2026
Natural Sciences and Engineering Research Council of Canada　　　　　　　*Waterloo, ON*
Promotes continued excellence in Canadian research by rewarding and retaining high-calibre doctoral students at Canadian institutions.

Ontario Graduate Scholarship　　　　　　　　　　　　　　　　　　2023
Ontario Student Assistance Program　　　　　　　　　　　　　　　*Waterloo, ON*
Encourages excellence in graduate studies at publicly-assisted universities in Ontario.

NSERC Canada Graduate Scholarship–Master's

Natural Sciences and Engineering Research Council of Canada

2022

Waterloo, ON

Provides financial support to high-calibre scholars engaged in an eligible master's program in Canada.

Vector Scholarship in AI

Vector Institute

2021

Waterloo, ON

An entrance award for top students pursuing AI master's degrees in Ontario.

The Gold Medal in Computing Science

University of Alberta

2021

Edmonton, AB

Awarded to the convocating Computing Science student with the highest average over the last three years of the program.

NSERC Undergraduate Student Research Award

Natural Sciences and Engineering Research Council of Canada

2020–2021

Edmonton, AB

Awarded to nurture interest and fully develop potential for a research career in the natural sciences and engineering.

Kao Family Eisenco Scholarship

University of Alberta

2020

Edmonton, AB

Recognizes superior academic achievement in students whose focus is theoretical computing.

Alberta Innovates Summer Research Studentship

University of Alberta

2019

Edmonton, AB

Supports students engaging in medical and health sciences research and innovation during the summer months.

Louise McKinney Scholarship

University of Alberta

2019

Edmonton, AB

Awarded to the top 1.5–2% of students in the Faculty of Science by academic standing.

Volunteer Experience

VP Website Development

Tutors for Affordable Education

October 2018–April 2020

Edmonton, AB

I improved the usability and discoverability of the club's website. I also tutored high school students in math and physics.

Web Developer

Three Hills School

November 2015–January 2016

Three Hills, AB

I developed a web application for players and organizers to track and manage the progress of Badminton tournaments.

Skills

Programming
Python, Haskell, JavaScript, C/C++, Matlab

Languages
English (native), German (B2)

Other Awards

David R. Cheriton Graduate Scholarship

University of Waterloo

2021–Present

Waterloo, ON

Awarded annually to top graduate students on the basis of academic excellence.

Dean's Silver Medal in Science

University of Alberta

2021

Edmonton, AB

Awarded to convocating students with superior academic achievement in an Honors program in the Faculty of Science.

Mathukumalli Venkata Subbamma Prize

University of Alberta

2020

Edmonton, AB

Awarded annually to an undergraduate student who has shown outstanding academic ability in Number Theory.

The Dirk Snoeck Henkemans Memorial Scholarship   2019
University of Alberta   *Edmonton, AB*
Preferentially awarded to a student who has made contributions to student life in the Department of Computing Science.

Max and Marjorie Ward Undergraduate Scholarship   2019
University of Alberta   *Edmonton, AB*
Awarded annually to students with superior academic achievement.

Faculty of Science Undergraduate Scholarship   2019
University of Alberta   *Edmonton, AB*
Awarded to upper-year students with superior academic achievement in the Faculty of Science.

Hooper–Munroe Academic Scholarship   2019
University of Alberta   *Edmonton, AB*
Awarded to the student of the highest academic standing in the preceding Winter Term of all those who apply.

JW Campbell Memorial Prize in Mathematics   2018
University of Alberta   *Edmonton, AB*
Recognizes the efforts of a student who achieves outstanding merit in introductory honors analysis.

Department of Mathematical Statistical Sciences Academic Excellence Scholarship   2017
University of Alberta   *Edmonton, AB*
Awarded to matriculating students based on exceptional mathematical ability or performance in high school mathematics.