

Chris Salahub

✉ chris.salahub@uwaterloo.ca | [in](#) [chris-salahub](#) | [📧](#) [Salahub](#) | [M](#) [@Salahub](#)

Summary

Technical Skills: Simulation, Data Visualization, Dimension Reduction, Regression, Prediction, Inference, Text Mining

Programming Languages: R, Python, SQL, Bash, MATLAB, C++

Domain Knowledge: Genomics, Structured Biosequence Data, Meta-Analysis, Survival Analysis, Classification and Regression Trees, Measuring Association, Data Science, Exploratory Data Analysis, Experimental Design, Machine Learning

Education

Ph.D. in Statistics, University of Waterloo

Waterloo, ON, Canada

Scholarship: [Alexander Graham Bell Doctoral Scholarship](#) (\$105,000 over 36 months)

May 2019 – Present

Thesis: *Explorations in Pairwise Measures of Association and Pooled Significance*

Supervisor: Dr. Wayne Oldford

M.Sc. in Statistics, ETH Zürich

Zürich, Switzerland

Scholarship: [ESOP Scholar](#) (\$48,000 for being in the top 2-3% of incoming ETH Masters Students)

Sept. 2017 – Mar. 2019

Thesis: *Seen to Be Done: A Graphical Analysis of Peremptory Challenge*

Supervisor: Prof. Dr. Marloes Maathuis

B.Math. in Statistics (Dean's Honours List), University of Waterloo

Waterloo, ON, Canada

Thesis: *About "her emails"*

Sept. 2013 – June 2017

Professional Experience

Measurement Data Scientist

Toronto, ON, Canada

[Vividata](#)

Aug. 2020 – Jan. 2022

Clustering: Pioneered a new segmentation of demographic data using multiple correspondence analysis

Data pipelines: Integrated SQL and R seamlessly to produce daily survey and click stream data reports

Survival analysis: Used Cox regression to predict panel attrition and virtually eliminate over-recruitment

Lecturer (Data Visualization)

Waterloo, ON, Canada

[University of Waterloo](#)

Sept. 2021 – Jan. 2022

Organization: Taught 80+ students and directed a team of 4+ teaching assistants

Data visualization: Presented topics including dimension reduction, spatial statistics, interactive graphics, and programming in R

Data Development Intern

Toronto, ON, Canada

[Environics Analytics](#)

May 2017 – Aug. 2017

Algorithm development: Reduced convergence time of a demographic microsimulation by more than 90% using a Markov Chain model

Research and Development Intern

Toronto, ON, Canada

[Environics Analytics](#)

May 2016 – Aug. 2016

Modelling: Conceived a stochastic model to solve a network flow problem which improved the fit of simulated data to observed data by 50% when implemented in R and MATLAB

Select Publications and Presentations

Chris Salahub and Jeffrey Uhlmann. *Optimal Structured Matrix Approximation for Robustness to Incomplete Biosequence Data*. Submitted to IEEE Transactions on Computational Biology and Bioinformatics March 2023 (under review)

Chris Salahub. *Racial bias in jury selection*. Significance, 20(2):16-20. April 2023.

Christopher Salahub. *A Statistician's Introduction to Genomics*. [SSC Annual Meeting](#). June 2021

Christopher Salahub. *String Manipulation in R*. Guest lecture for University of Waterloo STAT 847: Exploratory Data Analysis. Virtual. April 2021.

David Castells-Graells, Christopher Salahub, and Evangelos Pournaras. *On cycling risk and discomfort: urban safety mapping and bike route recommendations*. Computing. December 2019

Chris Salahub. *Another AI Prediction Piece*. DataDrivenInvestor. October 2018.

Honours and Awards

- 2020: NSERC Canada Alexander Graham Bell Graduate Doctoral Scholarship (CGS-D) recipient
- 2019: Presentation award for *Seen to be Done* at the Waterloo Student Conference in Statistics, Actuarial Science, and Finance
- 2019: Ontario Graduate Scholarship recipient
- 2019: Correlation One Data Science Scholarship at the University of Waterloo for Ph.D. in Statistics
- 2017–2019: [Excellence Scholarship and Opportunity Programme](#) Scholar at ETH Zürich for M.Sc. in Statistics
- 2017: Graduated with Distinction (Dean’s Honours List) – University of Waterloo – cumulative average of 93%
- 2016–2017: Five-time recipient of the [Cherry Statistics Award](#) (received in Statistical Methods for Process Improvements, Data Visualization, Experimental Design, Forecasting, Function Estimation) – University of Waterloo
- 2015: Contributing member of the award-winning [Waterloo 2015 iGEM team](#), which was given the Best Overgrad Software Tool Award, the Best Overgrad Poster Award, and was nominated for the Best Foundational Advance Award
- 2015: NSERC Undergraduate Student Research Award recipient
- 2013: Canadian National AP Scholar for attaining highest possible scores of 5 on five AP examinations - Statistics, Physics, Chemistry, Calculus, and European History

Projects

[My Dad’s Peaks](#) (Waterloo, 2021) Extracted data from HTML web pages using web scraping and regular expressions and matched it to a reference set to create a custom map visualization of mountains around the world

[Predicting Fracture Displacement](#) (Zürich, 2018) Applied data visualization and classification methods to six years of data from Kinderspital Zürich to safely reduce follow-up X-rays of healing finger fractures by 90%

[CRISPier](#) (Waterloo, 2015) Modelled the CRISPR-Cas9 system using stochastic and differential equation models for the award-winning 2015 Waterloo iGEM team in both R and Python; developed statistical tests to monitor and compare results

Administrative and Volunteer Experience

SAS Student Seminar Co-Chair

[Department of Statistics and Actuarial Science](#)

Organization Coordinated and hosted weekly virtual seminars by students and professors for 4 semesters

Waterloo, ON, Canada

Sept. 2021 – Dec. 2021

Statistics and Actuarial Science Graduate Student Representative

[Department of Statistics and Actuarial Science](#)

Communication Disseminated key information from department meetings to student constituents

Advocacy Represented the interests of statistics and actuarial science graduate students in departmental discussions

Waterloo, ON, Canada

Sept. 2020 – Sept. 2021

Statistics and Actuarial Science Councillor

[University of Waterloo Graduate Student Association](#)

Interviewing: Member of the Council Executive Committee responsible for vetting new executive applications

Survey design and analysis: Main analyst of GSA Vital Signs 2020 and designer of GSA COVID-19 Survey

Communication: Updated constituents on GSA meetings, surveyed for feedback, and organized events with regular emails

Waterloo, ON, Canada

Jan. 2020 – Mar. 2021

Off Campus Community Coordinator

[Federation of Students](#)

Leadership: Selected and directed a team of 33 volunteers assisting students with the transition to university

Organization: Planned a volunteer training weekend and the orientation programming for several hundred first year students, administered budgets, and delegated tasks

Waterloo, ON, Canada

May 2016 – Apr. 2017

Off Campus Community Don

[Federation of Students](#)

Leadership: Supported and guided first year students in the transition from high school to university studies

Teamwork: Maintained social connections with first year students and cooperated with a team of other dons

Waterloo, ON, Canada

May 2015 – Apr. 2016