

# Phillip J.K. Christoffersen

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## Education

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### Massachusetts Institute of Technology

M.S., PH.D IN ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

- EECS Merrill Lynch Fellow

Cambridge, MA

Sept. 2021 - Exp. June. 2027

### University of Toronto

HON B.SC IN COMPUTER SCIENCE (WITH HIGH DISTINCTION)

- Enrolled in Computer Science Specialist, Statistics Major, and Mathematics Minor
- cGPA of 3.99/4.0, GRE 336/340 (Verbal 168/170, Quantitative 168/170, Writing 6.0/6.0)

Toronto, ON

Sept. 2017 - June. 2021

### University of Toronto Schools

ONTARIO SECONDARY SCHOOL DIPLOMA

- Graduating average 98%, score of 5 in AP Physics, Chemistry, Biology, Calculus BC, Economics (Macro & Micro), English Lit.

Toronto, ON

Sept. 2011 - June 2017

## Work Experience

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### Vector Institute

RESEARCH INTERN

- Working to leverage a novel notion of causality for sample-efficient learning in structured reinforcement learning (RL) domains
- Supervised by Sheila McIlraith

Toronto, ON

May 2021 - Aug. 2021

### University of Toronto, Natural Sciences and Engineering Research Council

RESEARCH ASSISTANT

- Worked to publish novel results at the cutting edge intersection of traditional methods in KR / AI and recent development in RL
- Research focus on Reinforcement Learning in POMDPs and under non-Markovian dynamics supervised by Sheila McIlraith

Toronto, ON

April 2020 - Sept. 2020

### University of Toronto: Computer Science Department

TEACHING ASSISTANT, CSC263

- Providing mentorship in office hours, grading assignments and test papers, for major-level data structures course

Toronto, ON

Jan. 2021 - May 2021

### University of Toronto: Mathematics Department

TEACHING ASSISTANT, MAT137

- Provided mentorship in tutorials and office hours to 100+ students in a rigorous introductory calculus / real analysis course
- Graded test papers and problem sets for over a dozen major assessments

Toronto, ON

Sept. 2018 - Dec. 2020

### Canadian Imperial Bank of Commerce

GLOBAL MARKETS SUMMER ANALYST

- Built 3 internal analytics tools used to assist trading team and developed strategies / business cases for various trading teams, primarily working with the Foreign Exchange Options group, managing a multi-million dollar business case

Toronto, ON

May 2019 - August 2019

### BEAR (Behavioural Economics at Rotman)

RESEARCH ASSISTANT

RESEARCH ASSISTANT

Toronto, ON

June 2017 - August 2017

## Publications

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### Get It in Writing: Formal Contracts Mitigate Social Dilemmas in Multi-Agent RL

PHILLIP J.K. CHRISTOFFERSEN, ANDREAS A. HAUPT, DYLAN HADFIELD-MENELL

- ArXiv Link: <https://arxiv.org/pdf/2208.10469.pdf>

### Learning Symbolic Representations for Reinforcement Learning of Non-Markovian Behavior

PHILLIP J.K. CHRISTOFFERSEN, ANDREW C. LI, RODRIGO A. TORO ICARTE, SHEILA A. MCLRAITH

- Proceedings Link: [https://kr2ml.github.io/2020/papers/KR2ML\\_32\\_paper.pdf](https://kr2ml.github.io/2020/papers/KR2ML_32_paper.pdf)

NeurIPS KR2ML Workshop 2020

### The Act Of Remembering: A Study In Partially Observable Reinforcement Learning

RODRIGO TORO ICARTE, RICHARD VALENZANO, TORYN Q. KLASSEN, PHILLIP CHRISTOFFERSEN, AMIR-MASSOUD

FARAHMAND, SHEILA A. MCLRAITH

- ArXiv Link: <https://arxiv.org/pdf/2010.01753.pdf>

NeurIPS RWRL Workshop 2020

## Skills

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| <b>Programming</b>                       | Python, JAVA 8, C, MATLAB, Octave, R, MIPS Assembly (basic) |
| <b>Web Development</b>                   | HTML, CSS, Javascript, Angular, Ionic, Google APIs          |
| <b>Python AI / Statistical Libraries</b> | pytorch, scikit-learn, tensorflow, numpy, matplotlib, scipy |

## Honors & Awards

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- 2021 **EECS Merrill Lynch Fellow**, Massachusetts Institute of Technology (\$100,000)
- 2021 **Alexander Graham Bell Canada Graduate Scholarship: CGS-M (Declined)**, NSERC (\$17,500)
- 2020 **Undergraduate Student Research Award**, NSERC (\$6,000)
- 2018, 19 **University of Toronto Scholar**, Top 100 grades per undergraduate class (\$1,500)
- 2018, 19, 20 **Dean's List Scholar**, Cumulative GPA of 3.5 or higher annually
- 2019 **Joseph Alfred Whealy In Course Scholarship**, Trinity College (\$1,500)
- 2019 **James Scott Scholarship**, Trinity College, for High Performance in Specialist Program (\$500)
- 2018 **Winning Team**, Tech Under 20
- 2018 **In-Course Scholarship**, University of Toronto (\$1,500)
- 2018 **Ray Lawson Scholarship**, Trinity College, for High Academic Achievement in First Year (\$500)
- 2017 **U of T President's Scholar of Excellence**, Top 50 grades to incoming class (\$10,000)
- 2017 **Entrance Scholarship**, Trinity College, (offered, not tenable with above)
- 2017 **Berkinshaw Chancellor Scholarship**, Trinity College (\$2,000)

## Projects

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### "Mini" LaTeX Course

#### PEDAGOGICAL

- Created course to teach second-year undergraduate students mathematical writing in LaTeX
- Taught course as an online workshop during Winter 2021 for CSC263
- Used in subsequent offerings by CSC263 instructors

### gather

#### PERSONAL

- A minimum viable product for a spontaneous event-hosting platform
- Developed primarily in Ionic, Angular, using Google Firebase and Maps APIs
- Workshopped business plan for market launch with Silicon-Halton and TechIgniters, a Halton-region startup

## Extracurricular Activities and Other Skills

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### Music Composition

#### COMPOSER

- Invited to Interlochen Centre for the Arts Summer Program in 2016, one of a dozen composers selected internationally
- Have composed works for Symphonic Band, Piano, String Ensemble, and Orchestra
- Premiered original composition with the Scarborough Philharmonic Orchestra in Winter 2018, under Ronald Royer

Toronto

Nov. 2014 - PRESENT

### Piano Performance

#### ARCT

- Associate of the Royal Conservatory of Toronto (2017)

Toronto

2005 - PRESENT

### Scouts Canada / Det Danske Spejderkorps

#### SCOUT

- Chief Scout of Canada (2014)

Toronto

2008 - 2014

### Other:

#### LANGUAGES SPOKEN

- English (mother tongue)
- French (fluent)
- Danish (conversational)