

# DYLAN ASHLEY

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## EDUCATION

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- Ph.D. in Informatics** Expected 2024  
Università della Svizzera italiana (The Swiss AI Lab IDSIA, SUPSI)  
Supervisor: Jürgen Schmidhuber  
Focus: Reinforcement Learning, Machine Learning, Artificial Intelligence
- M.Sc. in Computing Science** 2020  
University of Alberta (Alberta Machine Intelligence Institute)  
Supervisor: Richard S. Sutton  
GPA: 4.0 / 4.0
- B.Sc. Honors in Computing Science** 2017  
University of Alberta

## PEER-REVIEWED PUBLICATIONS

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- Ashley, D. R.** (2020). *Understanding Forgetting in Artificial Neural Networks* [Master's thesis, University of Alberta]. <https://doi.org/10.7939/r3-6zvv-5z64>
- Ashley, D. R.**, Chockalingam, V., Kuzma, B., & Bulitko, V. (2019). Learning to Select Mates in Evolving Non-playable Characters. *Proceedings of the 2019 IEEE Conference on Games*, 1–8. <https://doi.org/10.1109/CIG.2019.8848114>
- Ashley, D. R.**, Chockalingam, V., Kuzma, B., & Bulitko, V. (2019). Learning to Select Mates in Artificial Life. *Proceedings of the Genetic and Evolutionary Computation Conference Companion*, 103–104. <https://doi.org/10.1145/3319619.3322060>
- Sherstan, C., **Ashley, D. R.**, Bennett, B., Young, K., White, A., White, M., & Sutton, R. S. (2018). Comparing Direct and Indirect Temporal-Difference Methods for Estimating the Variance of the Return. *Proceedings of the Conference on Uncertainty in Artificial Intelligence*, 63–72. <http://auai.org/uai2018/proceedings/papers/35.pdf>
- Amaral, J. N., Borin, E., **Ashley, D. R.**, Benedicto, C., Colp, E., Hoffmann, J. H. S., Karpoff, M., Ochoa, E., Redshaw, M., & Rodrigues, R. E. (2018). The Alberta Workloads for the SPEC CPU 2017 Benchmark Suite. *Proceedings of the 2018 IEEE International Symposium on Performance Analysis of Systems and Software*, 159–168. <https://doi.org/10.1109/ISPASS.2018.00029>

## HONORS AND AWARDS

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- Queen Elizabeth II Graduate Scholarship**, University of Alberta (C\$10,800) 2018
- CGS-M**, Natural Science and Engineering Research Council of Canada (C\$17,500) 2017
- Walter H. Johns Graduate Fellowship**, University of Alberta (C\$5,800) 2017

<b>Science Graduate Scholarship</b> , University of Alberta (C\$2,000)	2017
<b>Kao Family Eisenco Scholarship</b> , University of Alberta (C\$1,200)	2016
<b>Jason Lang Scholarship</b> , University of Alberta (C\$1,000)	2015
<b>Suncor Energy Scholarship</b> , Suncor Energy (C\$1,800)	2015
<b>Jason Lang Scholarship</b> , University of Alberta (C\$1,000)	2014
<b>Suncor Energy Scholarship</b> , Suncor Energy (C\$1,800)	2014

## WORK EXPERIENCE

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**Doctoral Assistant at the Faculty of Informatics** 2020

*Università della Svizzera italiana (The Swiss AI Lab IDSIA, SUPSI)*

- Worked with Prof. Jürgen Schmidhuber on reinforcement learning with neural networks.

**Graduate Research Assistant** 2017 – 2020

*Reinforcement Learning and Artificial Intelligence Laboratory, University of Alberta*

- Worked with Prof. Richard S. Sutton to investigate catastrophic forgetting in neural networks and the effect of step-size adaptation on it.
- Worked with Chen Ma, Junfeng Wen, and Prof. Yoshua Bengio to investigate combining successor features with universal value functions for transfer in reinforcement learning.
- Worked with Valliappa Chockalingam, Braedy Kuzma, and Prof. Vadim Bulitko to investigate evolving mate-selection strategies in artificial life.
- Worked with Prof. Richard S. Sutton to investigate adaptive bootstrapping for temporal difference methods in a reinforcement learning context.

**Vice-President Academic** 2019 – 2020

*Graduate Students' Association, University of Alberta*

- Official representative of over 7,900 graduate students in academic matters.
- Advocated for graduate student issues to the university and worked with the university to build a better learning environment for students.
- Delivered several significant advocacy victories, including better oversight for mentorship and a reduced increment in tuition during a budgetary crisis.
- Time commitment of approximately 30 hours a week for a one-year term.

**Undergraduate Summer Research Project** 2017

*Reinforcement Learning and Artificial Intelligence Laboratory, University of Alberta*

- Worked with Prof. Richard S. Sutton under a four-month NSERC Undergraduate Student Research Award.
- Investigated adaptive bootstrapping for temporal difference methods in a reinforcement learning context.
- Organized the 2017 offering of a recurring series of summer artificial intelligence talks for the department (15 sessions).

**Undergraduate Summer Research Project** 2016

*Reinforcement Learning and Artificial Intelligence Laboratory, University of Alberta*

- Worked with Prof. Richard S. Sutton under a four-month NSERC Undergraduate Student Research Award.
- Used the iRobot Create platform to build a concrete implementation of general value functions as predictive knowledge.
- Experimented with a new method of learning the variance of states in a reinforcement learning context.

**Teaching Assistant** 2015

*Department of Computing Science, University of Alberta*

- Introduction to file and database management course.
- Was responsible for running a weekly lab (18 students; 11 sessions), creating lab exams, and marking student assignments/projects.

**Undergraduate Summer Research Project** 2015

*Software Systems Laboratory, University of Alberta*

- Worked with Prof. José Nelson Amaral and the Standard Performance Evaluation Corporation under a four-month NSERC Undergraduate Student Research Award.
- Performed low-level, microarchitecture-independent characterization of new and existing workloads for benchmarks from upcoming CPU benchmarking suite.
- Presented research poster at summer undergraduate research poster session.

**SELECTED COMMUNITY SERVICE**

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<b>Mentoring Award Adjudication Panel</b> , University of Alberta	2020
<b>Equity, Diversity, and Inclusion Council</b> , Alberta Machine Intelligence Institute	2019 – 2020
<b>Registrar Selection Advisory Committee</b> , University of Alberta	2019
<b>Volunteer</b> , Campus Food Bank	2019
<b>Faculty of Graduate Studies and Research Council</b> , University of Alberta	2018 – 2019
<b>Board</b> , Graduate Students' Association	2018 – 2019
<b>Nominating Committee</b> , Graduate Students' Association	2018 – 2019
<b>Council</b> , Graduate Students' Association	2018 – 2020
<b>Mentor</b> , High School Internship Program	2015

**SELECTED ORAL PRESENTATIONS**

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<b>Canadian Association for Graduate Studies</b>	2019
<i>Improving Graduate Student Success in Higher Education</i>	
<b>IEEE Conference on Games</b>	2019
<i>Learning to Select Mates in Evolving Non-playable Characters</i>	
<b>Chinese Graduate Students Association Workshop</b>	2019
<i>Graduate School: Why Apply and How to Build a Strong Application</i>	

<b>Kindred</b>	2018
<i>Comparing Direct and Indirect Temporal-Difference Methods for Estimating the Variance of the Return</i>	

## CONFERENCE AND SUMMER SCHOOL ATTENDANCE

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<b>Neural Information Processing Systems</b> , Virtual	2020
<b>Canadian Association for Graduate Studies</b> , Halifax, CA	2019
<b>IEEE Conference on Games</b> , London, UK	2019
<b>CIFAR Deep Learning and Reinforcement Learning Summer School</b> , Edmonton, CA	2019
<b>Reinforcement Learning and Decision Making</b> , Montréal, CA	2019
<b>Chinese Graduate Students Association Workshop</b> , Edmonton, CA	2019
<b>Reverse Expo</b> , Edmonton, CA	2019
<b>Neural Information Processing Systems</b> , Montréal, CA	2018
<b>Artificial Intelligence and Interactive Digital Entertainment</b> , Edmonton, CA	2018
<b>Uncertainty in Artificial Intelligence</b> , Monterey, USA	2018
<b>CIFAR Deep Learning and Reinforcement Learning Summer School</b> , Toronto, CA	2018
<b>Accelerate AB</b> , Edmonton, CA	2018

## LANGUAGES

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**English:** Native Speaker  
**French:** Moderate Fluency  
**Mandarin:** Minimal Knowledge  
**Italian:** Minimal Knowledge

## PROFESSIONAL MEMBERSHIP

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<b>Member</b> , Association for Computing Machinery	Since 2014
<b>Member</b> , Association for the Advancement of Artificial Intelligence	Since 2018
<b>Member</b> , Institute of Electrical and Electronics Engineers	Since 2019