

DYLAN ASHLEY

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EDUCATION

- 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

- 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

- 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

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

WORK EXPERIENCE

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.
- Mentored high school student for two months as part of a high school internship program.
- Presented research poster at summer undergraduate research poster session.

SELECTED COMMUNITY SERVICE

Mentoring Award Adjudication Panel , University of Alberta	2020
Equity, Diversity, and Inclusion Council , Alberta Machine Intelligence Institute	2019 – 2020
Volunteer , Campus Food Bank	2019
Faculty of Graduate Studies and Research Council , University of Alberta	2018 – 2019
Board , Graduate Students' Association	2018 – 2019
Nominating Committee , Graduate Students' Association	2018 – 2019
Council , Graduate Students' Association	2018 – 2020

SELECTED ORAL PRESENTATIONS

Canadian Association for Graduate Studies	2019
<i>Improving Graduate Student Success in Higher Education</i>	
IEEE Conference on Games	2019
<i>Learning to Select Mates in Evolving Non-playable Characters</i>	

Chinese Graduate Students Association Workshop	2019
<i>Graduate School: Why Apply and How to Build a Strong Application</i>	

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

CONFERENCE AND SUMMER SCHOOL ATTENDANCE

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

PROFESSIONAL MEMBERSHIP

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

LANGUAGES

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

CITIZENSHIP AND RESIDENCE PERMITS

Canada: Citizen
South Africa: Citizen
Switzerland: B Permit