DYLAN ASHLEY

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EDUCATION

Ph.D. in Informatics   Expected 2025
Università della Svizzera italiana (Dalle Molle Institute for Artificial Intelligence Research)
Supervisor: Jürgen Schmidhuber
Focus: Reinforcement Learning, Neural Networks, Machine Learning

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

NOTABLE PEER-REVIEWED PUBLICATIONS

Štrupl, M., Faccio, F., **Ashley, D. R.**, Srivastava, R. K., & Schmidhuber, J. (in press). Reward-Weighted Regression Converges to a Global Optimum. *Proceedings of the Thirty-Sixth AAAI Conference on Artificial Intelligence.*

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., Hoffmam, 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 Research Assistant 2021 – Present

Faculty of Informatics, Università della Svizzera italiana

- Working with Prof. Jürgen Schmidhuber on using neural network-powered supervised learning methods to solve online reinforcement learning problems.

Director of Information Technology and Product Development 2021 – Present

Perseverance Analytics Ltd.

- Founding member of a non-profit startup based in Alberta.
- Startup connects communities to social supports to bridge the gap between the availability of services and accessibility of services.

Teaching Assistant 2021 – 2022

Faculty of Informatics, Università della Svizzera italiana

- Introduction to machine learning course.
- Was responsible for running tutorial sessions (54 students; 3 sessions), creating assignments and exams, and marking assignments and exams.

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
Improving Graduate Student Success in Higher Education	
IEEE Conference on Games	2019
Learning to Select Mates in Evolving Non-playable Characters	
Chinese Graduate Students Association Workshop	2019
Graduate School: Why Apply and How to Build a Strong Application	
Kindred	2018
Comparing Direct and Indirect Temporal-Difference Methods for Estimating the Variance of the Return	

CONFERENCE AND SUMMER SCHOOL ATTENDANCE

AAAI Conference on Artificial Intelligence, Virtual	2022
International Conference on Machine Learning, Virtual	2021
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