DYLAN ASHLEY

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EDUCATION

M.Sc. in Computing Science Expected 2020
University of Alberta (Alberta Machine Intelligence Institute), Edmonton AB
Supervisor: Richard S. Sutton
Thesis: *Title Pending*
Focus: Reinforcement Learning, Machine Learning, Artificial Intelligence
GPA: 4.0 / 4.0

B.Sc. Honors in Computing Science 2017
University of Alberta, Edmonton AB

PEER-REVIEWED PUBLICATIONS

Ashley, D. R., Chockalingam, V., Kuzma, B., & Bulitko, V. (2019). Learning to Select Mates in Evolving Non-playable Characters. In *Proceedings of the IEEE Conference on Games* (pp. 1 – 8). IEEE.

Ashley, D. R., Chockalingam, V., Kuzma, B., & Bulitko, V. (2019). Learning to Select Mates in Artificial Life. In *Proceedings of the Genetic and Evolutionary Computation Conference* (pp. 103 – 104). ACM.

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. In *Proceedings of the Conference on Uncertainty in Artificial Intelligence* (pp. 63 – 72). AUAI.

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. In *Proceedings of the IEEE International Symposium on Performance Analysis of Systems and Software* (pp. 159 – 168). IEEE.

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) 2015
Suncor Energy Scholarship, Suncor Energy (C$1,800) 2015
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Suncor Energy Scholarship, Suncor Energy (C$1,800) 2014

RESEARCH EXPERIENCE

Graduate Research Assistant 2017 – 2019

Reinforcement Learning and Artificial Intelligence Laboratory, University of Alberta

- Worked with Prof. Richard S. Sutton to investigate the effect of step-size adaptation on catastrophic forgetting in neural networks.
- 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.

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).

Machine Learning Research Project 2016

Octopusapp Inc. and the University of Alberta

- Worked with Prof. Russ Greiner and Octopusapp Inc. on predicting customer churn in their Jobber product.
- Applied machine learning to predict if, given the account activity of the user, a failed billing was due to customer churn.
- Findings were subsequently implemented in Jobber.
- Algorithms used included Artificial Neural Networks, Support Vector Machines, Extreme Gradient Boosting, Decision Trees, Random Forests, and Decision Stumps.

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.
- Analyzed the overfitting behavior of random state representations in a reinforcement learning context.
- Experimented with a new method of learning the variance of states in a reinforcement learning context.

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.

TEACHING EXPERIENCE

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.

MENTORSHIP EXPERIENCE

High School Internship Program 2015

Software Systems Laboratory, University of Alberta

- Reviewed applications then selected a candidate.
- Mentored high school student for two months as they worked to generate workloads for an upcoming CPU benchmarking suite.

OTHER EXPERIENCE

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.

SELECTED COMMUNITY SERVICE

Mentoring Award Adjudication Panel, University of Alberta 2020

Equity, Diversity, and Inclusion Council, Alberta Machine Intelligence Institute 2019 – 2020

Registrar Selection Advisory Committee, University of Alberta 2019

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

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

LANGUAGES

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

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