

Associate Professor

Department of Computing Science

University of Alberta

CTO of RLCare

whitem@ualberta.ca

marthawhite.ca

(587) 590-9940

RESEARCH INTERESTS **Reinforcement learning**, representation learning, time series prediction, RL for process control

ACADEMIC POSITIONS **Associate Professor** 2020-present  
Department of Computing Science, Faculty of Science, University of Alberta

**Assistant Professor** 2017-2020  
Department of Computing Science, Faculty of Science, University of Alberta

**Assistant Professor** 2015-2017  
School of Informatics and Computing, Indiana University Bloomington

EDUCATION **The University of Alberta**, Edmonton, Alberta, Canada

Ph.D., Computing Science, January 2010-December 2014  
Supervisors: Michael Bowling and Dale Schuurmans

M.Sc. Computing Science, September 2008-December 2009

B.S.c, Honors Mathematics with First Class Honors, 2008

B.S.c, Honors Computing Science with First Class Honors, 2008

#### PUBLICATIONS **Refereed Journal and Conference Articles**

\*HQP authors marked as Undergrad, MSc, PhD and Post-doctoral.

- 108 Investigating the Histogram Loss in Regression. E. Imani, K. Luedemann, S. Scholnick-Hughes, E. Elelimy, M. White. *Journal of Machine Learning Research (JMLR)*, 2026.
- 107 Endpoint Replay: Compressing the Recency Buffer in Deep Reinforcement Learning. P. M. Panahi, A. Ashrafi, H. Du, A. Patterson, M. White, A. White. *Reinforcement Learning Journal (RLJ)*, 2026.
- 106 Improving Reward-Based Hindsight Credit Assignment. A. Ramesh, J. He, J. Schmidhuber, M. White. *Reinforcement Learning Journal (RLJ)*, 2026.
- 105 Dynamics Models for Offline Hyperparameter Selection in Real-World RL. J. Coblin, H. Wang, M. White, A. White. *Reinforcement Learning Journal (RLJ)*, 2026.
- 104 Revisiting FTA: A Sparse One-to-Many Activation for Reinforcement Learning. T. Lazar, M. Vandergrift, M. White, A. White. *Reinforcement Learning Journal (RLJ)*, 2026.
- 103 Forager: a lightweight testbed for continual learning with partial observability in RL. S. Tang, X. Xiong, A. Hakhverdyan, A. Patterson, J. Adkins, J. He, E. Elelimy, P. M. Panahi, M. White, A. White. *Reinforcement Learning Journal (RLJ)*, 2026.
- 102 Gradient Iterated Temporal-Difference Learning. T. Vincent, K. Gerhardt, Y. Tripathi, H. Maraqten, A. White, M. White, J. Peters, C. D'Eramo. *Reinforcement Learning Journal (RLJ)*, 2026.
- 101 Position: RL Researchers Need to Distinguish Between Solving Simulators and Using Simulators as a Proxy. M. Vandergrift, E. Elelimy, M. White. *International Conference on Machine Learning (ICML)*, 2026.
- 100 Accelerating Q-learning through Efficient Value-sharing across Actions. P. Nagarajan, B. Daley, M. White, M. C. Machado. *International Conference on Machine Learning (ICML)*, 2026.
- 99 Distributions as Actions: A Unified Framework for Diverse Action Spaces. J. He, A. R. Mahmood, M. White. *International Conference on Learning Representations (ICLR)*, 2026.

- 98 Regularized Latent Dynamics Prediction is a Strong Baseline For Behavioral Foundation Models. [P. Jajoo](#), [H. Sikchi](#), [S. Agarwal](#), [A. Zhang](#), [S. Niekum](#), [M. White](#). *International Conference on Learning Representations (ICLR)*, 2026.
- 97 When is Offline Policy Selection Sample Efficient for Reinforcement Learning? [V. Liu](#), [P. Nagarajan](#), [A. Patterson](#), [M. White](#). *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2026.
- 96 PC-Gym: Benchmark environments for process control problems. [M. Bloor](#), [J. Torracca](#), [I. O. Sandoval](#), [A. Ahmed](#), [M. White](#), [M. Mercangoz](#), [C. Tsay](#), [E. A. Del Rio Chanona](#), [M. Mowbray](#). *Computers & Chemical Engineering*, 2026.
- 95 An Analysis of Action-Value Temporal-Difference Methods That Learn State Values. [B. Daley](#), [P. Nagarajan](#), [M. White](#), [M. C. Machado](#). *Reinforcement Learning Journal (RLJ)*, 2025.
- 94 Deep Reinforcement Learning with Gradient Eligibility Traces. [E. Elelimy](#), [B. Daley](#), [A. Patterson](#), [M. C. Machado](#), [A. White](#), [M. White](#). *Reinforcement Learning Journal (RLJ)*, 2025. Received paper award: **Outstanding Paper in Theory of Reinforcement Learning**.
- 93 Rethinking the Foundations for Continual Reinforcement Learning. [E. Elelimy](#), [D. Szepesvari](#), [M. White](#), [M. Bowling](#). *Reinforcement Learning Journal (RLJ)*, 2025.
- 92 Investigating the Utility of Mirror Descent in Off-policy Actor-Critic. [S. Neumann](#), [J. He](#), [A. White](#), [M. White](#). *Reinforcement Learning Journal (RLJ)*, 2025.
- 91 Value Bonuses using Ensemble Errors for Exploration in Reinforcement Learning. [A. Wahab](#), [R. Kumaraswamy](#), [M. White](#). *Reinforcement Learning Journal (RLJ)*, 2025.
- 90 Position: Lifetime tuning is incompatible with continual reinforcement learning. [G. Mesbahi](#), [P. M. Panahi](#), [O. Mastikhina](#), [S. Tang](#), [M. White](#), [A. White](#). *International Conference on Machine Learning (ICML)*, 2025.
- 89  $q$ -exponential family for policy optimization. [L. Zhu](#), [H. Shah](#), [H. Wang](#), [Y. Nagai](#), [M. White](#). *International Conference on Learning Representations (ICLR)*, 2025.
- 88 Is Okham’s razor losing its edge? New perspectives on the principle of model parsimony. [M. Dubova](#), [S. Chandramouli](#), [G. Gigerenzer](#), [P. Grunwald](#), [W. Holmes](#), [T. Lombrozo](#), [M. Marelli](#), [S. Musslick](#), [B. Nicenboim](#), [L. N. Ross](#), [R. Shiffrin](#), [M. White](#), [E.-J. Wagenmakers](#), [P.-C. Burkner](#), [S. Sloman](#). *Proceedings of the National Academy of Sciences (PNAS)*, 2025.
- 87 Data-Efficient Policy Evaluation Through Behavior Policy Search. [J. Hanna](#), [Y. Chandak](#), [P. Thomas](#), [M. White](#), [P. Stone](#), [S. Niekum](#). *Journal of Machine Learning Research (JMLR)*, 2024.
- 86 Goal-Space Planning with Subgoal Models. [C. Lo](#), [K. Roice](#), [P. M. Panahi](#), [S. Jordan](#), [A. White](#), [G. Mihucz](#), [F. Aminmansour](#), [M. White](#). *Journal of Machine Learning Research (JMLR)*, 2024.
- 85 Empirical Design in Reinforcement Learning. [A. Patterson](#), [S. Neumann](#), [M. White](#), [A. White](#). *Journal of Machine Learning Research (JMLR)*, 2024.
- 84 Real-Time Recurrent Learning using Trace Units in Reinforcement Learning. [E. Elelimy](#), [A. White](#), [M. Bowling](#), [M. White](#). *Advances in Neural Information Processing Systems (NeurIPS)*, 2024.
- 83 Deep Policy Gradient Without Batch Updates or a Replay Buffer. [G. Vasan](#), [M. Elsayed](#), [S. Alireza Azimi](#), [J. He](#), [F. Shahriar](#), [C. Bellinger](#), [M. White](#), [A. R. Mahmood](#). *Advances in Neural Information Processing Systems (NeurIPS)*, 2024.
- 82 The Cross-environment Hyperparameter Setting Benchmark for Reinforcement Learning. [A. Patterson](#), [S. Neumann](#), [R. Kumaraswamy](#), [M. White](#) and [A. White](#). *Reinforcement Learning Journal (RLJ)*, 2024.
- 81 Investigating the Interplay of Prioritized Replay and Generalization. [P. Panahi](#), [A. Patterson](#), [M. White](#), and [A. White](#). *Reinforcement Learning Journal (RLJ)*, 2024.
- 80 Demystifying the Recency Heuristic in Temporal-Difference Learning. [B. Daley](#), [M. C. Machado](#), and [M. White](#). *Reinforcement Learning Journal (RLJ)*, 2024.
- 79 Multistep Predecessor Models and Mitigating Errors due to Hallucinated Value in Dyna-Style Planning. [F. Aminmansour](#), [T. Jafferjee](#), [E. Imani](#), [E. Talvitie](#), [M. Bowling](#), and [M. White](#). *Journal of Artificial Intelligence Research (JAIR)*, 2024.

- 78 Averaging n-step Returns Reduces Variance in Reinforcement Learning. [B. Daley](#), [M. White](#), and [M. C. Machado](#). *International Conference on Machine Learning (ICML)*, 2024.
- 77 Position Paper: Limitations of and Alternatives to Benchmarking in Reinforcement Learning Research. [S. M. Jordan](#), [B. Castro da Silva](#), [A. White](#), [M. White](#), [P. S. Thomas](#). *International Conference on Machine Learning (ICML)*, 2024.
- 76 Offline Reinforcement Learning via Tsallis Regularization. [L. Zhu](#), [M. Schlegel](#), [H. Wang](#), and [M. White](#). *Transactions on Machine Learning Research (TMLR)*, 2024.
- 75 Investigating the Properties of Neural Network Representations in Reinforcement Learning. [H. Wang](#), [E. Miah](#), [M. White](#), [M. C. Machado](#), [Z. Abbas](#), [R. Kumaraswamy](#), [V. Liu](#) and [A. White](#), *Artificial Intelligence Journal (AIJ)*, 2024.
- 74 GVF's in the Real World: Making Predictions Online for Water Treatment. [K. Janjua](#), [H. Shah](#), [M. White](#), [E. Miah](#), [M.C. Machado](#), and [A. White](#). *Machine Learning*, 2023.
- 73 General Munchausen Reinforcement Learning with Tsallis Kullback-Leibler Divergence. [L. Zhu](#), [Z. Chen](#), [M. Schlegel](#) and [M. White](#). *Advances in Neural Information Processing Systems (NeurIPS)*, 2023.
- 72 Resmax: An Alternative Soft-Greedy Operator for Reinforcement Learning. [E. Miah](#), [R. MacQueen](#), [A. Ayoub](#), [A. Masoumzadeh](#) and [M. White](#). *Transactions on Machine Learning Research (TMLR)*, 2023.
- 71 Scalable Real-Time Recurrent Learning Using Columnar-Constructive Networks. [K. Javed](#), [H. Shah](#), [R.S. Sutton](#) and [M. White](#). *Journal of Machine Learning Research (JMLR)*, 2023.
- 70 Trajectory-Aware Eligibility Traces for Off-Policy Reinforcement Learning. [B. Daley](#), [M. White](#), [C. Amato](#) and [M. C. Machado](#). *International Conference on Machine Learning (ICML)*, 2023.
- 69 Measuring and Mitigating Interference in Reinforcement Learning. [V. Liu](#), [H. Wang](#), [R. Y. Tao](#), [K. Javed](#), [A. White](#) and [M. White](#). *Conference on Lifelong Learning Agents (CoLLAs)*, 2023.
- 68 Exploiting Action Impact Regularity and Exogenous State Variables for Offline Reinforcement Learning. [V. Liu](#), [J. Wright](#) and [M. White](#). *Journal of Artificial Intelligence Research (JAIR)*, 2023.
- 67 Off-Policy Actor-Critic with Emphatic Weightings. [E. Graves](#), [E. Imani](#), [R. Kumaraswamy](#) and [M. White](#). *Journal of Machine Learning Research (JMLR)*, 2023.
- 66 Greedy Actor-Critic: A New Conditional Cross-Entropy Method for Policy Improvement. [S. Neumann](#), [S. Lim](#), [A. G. Joseph](#), [Y. Pan](#), [A. White](#) and [M. White](#). *International Conference on Learning Representations (ICLR)*, 2023.
- 65 The In-Sample Softmax for Offline Reinforcement Learning. [C. Xiao](#), [H. Wang](#), [Y. Pan](#), [A. White](#) and [M. White](#). *International Conference on Learning Representations (ICLR)*, 2023.
- 64 Asymptotically Unbiased Off-Policy Policy Evaluation when Reusing Old Data in Nonstationary Environments. [V. Liu](#), [Y. Chandak](#), [P. Thomas](#) and [M. White](#). *International Conference on AI and Statistics (AISTATS)*, 2023.
- 63 Representation Alignment in Neural Networks. [E. Imani](#), [W. Hu](#) and [M. White](#). *Transactions on Machine Learning Research (TMLR)*, 2022.
- 62 Robust Losses for Learning Value Functions. [A. Patterson](#), [V. Liao](#) and [M. White](#). *Transactions on Pattern Analysis and Machine Learning (TPAMI)*, 2022.
- 61 Greedification Operators for Policy Optimization: Investigating Forward and Reverse KL Divergences. [A. Chan](#), [H. Silva](#), [S. Lim](#), [T. Kozuno](#), [A. R. Mahmood](#), [M. White](#). *Journal of Machine Learning Research (JMLR)*, 2022.
- 60 No More Pesky Hyperparameters: Offline Hyperparameter Tuning for Reinforcement Learning. [H. Wang](#), [A. Sakhadeo](#), [A. White](#), [J. Bell](#), [V. Liu](#), [X. Zhao](#), [P. Liu](#), [T. Kozuno](#), [A. Fyshe](#), [M. White](#). *Transactions on Machine Learning Research (TMLR)*, 2022.
- 59 Understanding and Mitigating the Limitations of Prioritized Replay. [J. Mei](#), [Y. Pan](#), [A. Farahmand](#), [H. Yao](#), [M. White](#). *Uncertainty in Artificial Intelligence (UAI)*, 2022.
- 58 A Temporal-Difference Approach to Policy Gradient Estimation. [S. Tosatto](#), [A. Patterson](#), [M. White](#) and [A. R. Mahmood](#). *International Conference on Machine Learning (ICML)*, 2022.

- 57 A Generalized Projected Bellman Error for Off-policy Value Estimation in Reinforcement Learning. [A. Patterson](#), [A. White](#) and [M. White](#). *Journal of Machine Learning Research (JMLR)*, 2022.
- 56 An Alternate Policy Gradient Estimator for Softmax Policies. [S. Garg](#), [S. Tosatto](#), [Y. Pan](#), [M. White](#) and [A. R. Mahmood](#). *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2022.
- 55 Resonance in Weight Space: Covariate Shift Can Drive Divergence of SGD with Momentum. [K. Banman](#), [L. Peet-Pare](#), [N. Hegde](#), [A. Fyshe](#) and [M. White](#). *International Conference on Learning Representations (ICLR)*, 2022.
- 54 Sim2Real in Robotics and Automation: Applications and Challenges. [S. Hofer](#), [K. Bekris](#), [A. Handa](#), [J.C. Gamboa](#), [M. Mozifian](#), [F. Golemo](#), [C. Atkeson](#), [D. Fox](#), [K. Goldberg](#), [J. Leonard](#), [C. Karen Liu](#), [J. Peters](#), [S. Song](#), [P. Welinder](#), [Peter](#) and [M. White](#). *IEEE Transactions on Automation Science and Engineering*, 2021.
- 53 Continual Auxiliary Task Learning. [M. McLeod](#), [C. Lo](#), [M. Schlegel](#), [A. Jacobsen](#), [R. Kumaraswamy](#), [M. White](#) and [A. White](#). *Advances in Neural Information Processing Systems (NeurIPS)*, 2021.
- 52 Structural Credit Assignment in Neural Networks using Reinforcement Learning. [D. Gupta](#), [G. Mihucz](#), [M. Schlegel](#), [J. Kostas](#), [P. Thomas](#), [M. White](#). *Advances in Neural Information Processing Systems (NeurIPS)*, 2021.
- 51 Fuzzy Tiling Activations: A Simple Approach to Learning Sparse Representations Online. [Y. Pan](#), [K. Banman](#), and [M. White](#). *International Conference on Learning Representations (ICLR)*, 2021.
- 50 General Value Function Networks. [M. Schlegel](#), [A. Jacobsen](#), [Z. Abbas](#), [A. Patterson](#), [A. White](#) and [M. White](#). *Journal of AI Research (JAIR)*, 2021.
- 49 From Language to Language-ish: How Brain-Like is an LSTM’s Representation of Atypical Language Stimuli? [M. Hashemzadeh](#), [G. Kaufeld](#), [M. White](#), [A. E. Martin](#), [A. Fyshe](#). *Findings of ACL: Empirical Methods in Natural Language Processing (EMNLP)*. 2020.
- 48 Towards Safe Policy Improvement for Non-Stationary MDPs. [Y. Chandak](#), [S. Jordan](#), [G. Theodorou](#), [M. White](#), [P. S. Thomas](#). *Advances in Neural Information Processing Systems (NeurIPS)*, 2020.
- 47 An implicit function learning approach for parametric modal regression. [Y. Pan](#), [E. Imani](#), [A. Farahmand](#) and [M. White](#). *Advances in Neural Information Processing Systems (NeurIPS)*, 2020.
- 46 Adapting Behaviour via Intrinsic Reward: A Survey and Empirical Study. [C. Linke](#), [N. M. Ady](#), [M. White](#), [T. Degris](#), and [A. White](#). *Journal of AI Research (JAIR)*, 2020.
- 45 Gradient Temporal-Difference Learning with Regularized Corrections. [S. Ghiassian](#), [A. Patterson](#), [S. Garg](#), [D. Gupta](#), [A. White](#) and [M. White](#). *International Conference on Machine Learning (ICML)*, 2020.
- 44 Selective Dyna-style Planning Under Limited Model Capacity. [Z. Abbas](#), [S. Sokota](#), [E. Talvitie](#) and [M. White](#). *International Conference on Machine Learning (ICML)*, 2020.
- 43 Optimizing for the Future in Non-Stationary MDPs. [Y. Chandak](#), [G. Theodorou](#), [S. Shankar](#), [M. White](#), [S. Mahadevan](#), [P. S. Thomas](#). *International Conference on Machine Learning (ICML)*, 2020.
- 42 Training Recurrent Neural Networks Online by Learning Explicit State Variables. [S. Nath](#), [V. Liu](#), [A. Chan](#), [A. White](#) and [M. White](#). *International Conference on Learning Representations (ICLR)*, 2020.
- 41 Maxmin Q-learning: Controlling the Estimation Bias of Q-learning. [Q. Lan](#), [Y. Pan](#), [A. Fyshe](#) and [M. White](#). *International Conference on Learning Representations (ICLR)*, 2020.
- 40 Maximizing Information Gain in Partially Observable Environments via Prediction Rewards. [Y. Satsangi](#), [S. Lim](#), [S. Whiteson](#), [F. Oliehoek](#) and [M. White](#). *International Conference on Autonomous Agents and Multi-agent Systems (AAMAS)*, 2020.
- 39 Meta-Learning Representations for Continual Learning. [K. Javed](#) and [M. White](#). *Advances in Neural Information Processing Systems (NeurIPS)*, 2019.
- 38 Importance Resampling for Off-policy Prediction. [M. Schlegel](#), [W. Chung](#), [D. Graves](#), [J. Qian](#) and [M. White](#). *Advances in Neural Information Processing Systems (NeurIPS)*, 2019.

- 37 Learning Macroscopic Brain Connectomes via Group-Sparse Factorization. [F. Aminmansour](#), [A. Patterson](#), [L. Le](#), [Y. Peng](#), [D. Mitchell](#), [F. Pestilli](#), [C. Caiafa](#), [R. Greiner](#) and [M. White](#). *Advances in Neural Information Processing Systems (NeurIPS)*, 2019.
- 36 Planning with Expectation Models. [Y. Wan](#), [Z. Abbas](#), [A. White](#), [M. White](#) and [R. S. Sutton](#). *International Joint Conference on Artificial Intelligence (IJCAI)*, 2019.
- 35 Hill Climbing on Value Estimates for Search-control in Dyna. [Y. Pan](#), [H. Yao](#), [A. Farahmand](#) and [M. White](#). *International Joint Conference on Artificial Intelligence (IJCAI)*, 2019.
- 34 Two-Timescale Networks for Nonlinear Value Function Approximation. [W. Chung](#), [S. Nath](#), [A. Joseph](#) and [M. White](#). *International Conference on Learning Representations (ICLR)*, 2019.
- 33 The Utility of Sparse Representations for Control in Reinforcement Learning. [V. Liu](#), [R. Kumaraswamy](#), [L. Le](#), and [M. White](#). *AAAI Conference on Artificial Intelligence (AAAI)*, 2019.
- 32 Meta-descent for Online, Continual Prediction. [A. Jacobsen](#), [M. Schlegel](#), [C. Linke](#), [T. Degris](#), [A. White](#) and [M. White](#). *AAAI Conference on Artificial Intelligence (AAAI)*, 2019.
- 31 An Off-policy Policy Gradient Theorem Using Emphatic Weightings. [E. Imani](#), [E. Graves](#) and [M. White](#). *Advances in Neural Information Processing Systems (NeurIPS)*, 2018.
- 30 Supervised autoencoders: Improving generalization performance with unsupervised regularizers. [L. Le](#), [A. Patterson](#) and [M. White](#). *Advances in Neural Information Processing Systems (NeurIPS)*, 2018.
- 29 Context-dependent upper-confidence bounds for directed exploration. [R. Kumaraswamy](#), [M. Schlegel](#), [A. White](#) and [M. White](#). *Advances in Neural Information Processing Systems (NeurIPS)*, 2018.
- 28 Improving Regression Performance with Distributional Losses. [E. Imani](#) and [M. White](#). *International Conference on Machine Learning (ICML)*, 2018.
- 27 Reinforcement Learning with Function-Valued Action Spaces for Partial Differential Equation Control. [Y. Pan](#), [A. Farahmand](#), [M. White](#), [S. Nabi](#), [P. Grover](#), [D. Nikovski](#). *International Conference on Machine Learning (ICML)*, 2018.
- 26 Organizing experience: a deeper look at replay mechanisms for sample-based planning in continuous state domains. [Y. Pan](#), [Z. Abbas](#), [A. White](#), [A. Patterson](#), [M. White](#). *International Joint Conference on Artificial Intelligence (IJCAI)*, 2018.
- 25 High-confidence error estimates for learned value functions. [T. Sajed](#), [W. Chung](#) and [M. White](#). *Uncertainty in Artificial Intelligence (UAI)*, 2018.
- 24 Comparing Direct and Indirect Temporal-Difference Methods for Estimating the Variance of the Return. [C. Sherstan](#), [D. Ashley](#), [B. Bennet](#), [K. Young](#), [A. White](#), [M. White](#), [R. Sutton](#). *Uncertainty in Artificial Intelligence (UAI)*, 2018.
- 23 Multi-view Matrix Factorization for Linear Dynamical System Estimation. [M. Karami](#), [M. White](#), [D. Schuurmans](#) and [C. Szepesvari](#). *Advances in Neural Information Processing Systems (NeurIPS)*, 2017.
- 22 Unifying task specification in reinforcement learning. [M. White](#). *International Conference on Machine Learning (ICML)*, 2017.
- 21 Adapting kernel representations online using submodular maximization. [M. Schlegel](#), [Y. Pan](#) and [M. White](#). *International Conference on Machine Learning (ICML)*, 2017.
- 20 Effective sketching methods for value function approximation. [Y. Pan](#), [E. Sadeqi Azer](#) and [M. White](#). *International Conference on Uncertainty in AI (UAI)*, 2017.
- 19 Learning sparse representations in reinforcement learning with sparse coding. [L. Le](#), [R. Kumaraswamy](#), and [M. White](#). *International Joint Conference on Artificial Intelligence (IJCAI)*, 2017.
- 18 Accelerated Gradient Temporal Difference Learning. [Y. Pan](#), [A. White](#) and [M. White](#). *AAAI Conference on Artificial Intelligence (AAAI)*, 2017.
- 17 Recovering true classifier performance in positive-unlabeled learning. [S. Jain](#), [M. White](#), [P. Radivojac](#). *AAAI Conference on Artificial Intelligence (AAAI)*, 2017.

- 16 Estimating the class prior and posterior from noisy positives and unlabeled data. S. Jain, M. White, P. Radivojac. *Advances in Neural Information Processing Systems (NeurIPS)*, 2016.
- 15 Investigating practical, linear temporal difference learning. A. White and M. White. *International Conference on Autonomous Agents and Multi-agent Systems (AAMAS)*, 2016.
- 14 A greedy approach to adapting the trace parameter for temporal difference learning. A. White and M. White. *International Conference on Autonomous Agents and Multi-agent Systems (AAMAS)*, 2016.
- 13 Incremental Truncated LSTD. C. Gehring, [Y. Pan](#) and M. White. *International Joint Conference on Artificial Intelligence (IJCAI)*, 2016.
- 12 An emphatic approach to the problem of off-policy temporal-difference learning. R. Sutton, A.R. Mahmood, M. White. *Journal of Machine Learning Research*, 2016.
- 11 Scalable Metric Learning for Co-embedding. F. Mirzazadeh, M. White, A. Gyorgy and D. Schuurmans. *In ECML PKDD*, 2015.
- 10 Optimal Estimation of Multivariate ARMA Models. M. White, J. Wen, M. Bowling and D. Schuurmans. *AAAI Conference on Artificial Intelligence (AAAI)*, 2015.
- 9 Partition Tree Weighting. J. Veness, M. White, M. Bowling, and A. Gyorgy. *Data Compression Conference*, 2013.
- 8 Convex Multiview Subspace Learning. M. White, Y. Yu, X. Zhang, D. Schuurmans. *Advances in Neural Information Processing Systems (NeurIPS)*, 2012.
- 7 Off-Policy Actor-Critic. T. Degris, M. White and R. S. Sutton. *International Conference on Machine Learning (ICML)*, 2012.
- 6 Generalized Optimal Reverse Prediction. M. White and D. Schuurmans. *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2012.
- 5 Convex Sparse Coding, Subspace Learning, and Semi-Supervised Extensions. X. Zhang, Y. Yu, M. White, R. Huang, and D. Schuurmans. *AAAI Conference on Artificial Intelligence (AAAI)*, 2011.
- 4 Interval Estimation for Reinforcement-Learning Algorithms in Continuous-State Domains. M. White and A. White. *Advances in Neural Information Processing Systems (NeurIPS)*, 2010.
- 3 Relaxed Clipping: A Global Training Method for Robust Regression and Classification. Y. Yu, M. Yang, L. Xu, M. White, D. Schuurmans. *Advances in Neural Information Processing Systems (NeurIPS)*, 2010.
- 2 Optimal Reverse Prediction: A Unified Perspective on Supervised, Unsupervised and Semi-supervised Learning. L. Xu, M. White and D. Schuurmans. *International Conference on Machine Learning (ICML)*, 2009. **Honourable Mention for Best Paper**
- 1 Learning a Value Analysis Tool For Agent Evaluation. M. White and M. Bowling. *International Joint Conference on Artificial Intelligence (IJCAI)*, 2009.

## Theses

M. White. **Regularized factor models.** PhD thesis, University of Alberta. Received the Faculty of Science Doctoral Dissertation Award.

M. White. **A General Framework for Reducing Variance in Agent Evaluation.** Master's thesis, University of Alberta.

|                 |                                                                                                        |           |
|-----------------|--------------------------------------------------------------------------------------------------------|-----------|
| RESEARCH GRANTS | <b>NSERC Discovery Grant</b>                                                                           | 2025-2030 |
|                 | \$47k per year (total: 235k). Sole PI. "Sample Efficient Reinforcement Learning Using Modular Models". |           |
|                 | <b>Canada CIFAR AI (CCAI) Chair.</b>                                                                   | 2024-2029 |
|                 | \$750,000 in research funding for five years.                                                          |           |
|                 | <b>Canada Research Chair in Reinforcement Learning, Tier II.</b>                                       | 2024-2029 |
|                 | \$600,000 to the university for five years, including 200,000 in research funding.                     |           |

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | <b>CIFAR Catalyst Grant</b> 2024-2026<br>\$100,000 for HQP funding on a joint project with Dr. Ahmed Ragoub at Natural Resources Canada, titled “Solving Simulators with Reinforcement Learning for Material and Process Design”.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                         | <b>Killam Accelerator Research Award.</b> 2021-2024<br>\$225,000 in research funding for three years.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                         | <b>Canada CIFAR AI (CCAI) Chair.</b> 2018-2023<br>\$650,000 in research funding for five years.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                         | <b>Compute Canada Resource Allocation Grant.</b> 2019-present<br>\$100,000 per year in additional computing resources on Compute Canada clusters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                         | <b>NSERC Discovery Grant.</b> 2018-2025<br>\$40k per year (total: 280k). Sole PI. “Sparse representations for reinforcement learning.”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                         | <b>NSERC Discovery Accelerator.</b> 2018-2021<br>150,000 total as a supplement to the Discovery Grant.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                         | <b>NSERC CRD</b> 2018-2021<br>\$536,700 over 3 years. Sole PI. “Optimizing water treatment operation using reinforcement learning.”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                         | <b>NSF CISE CRII grant.</b> 2016-2018<br>\$174,616 over two years. Sole PI. “Accelerated stochastic approximation for reinforcement learning.”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                         | <b>Precision Health Initiative.</b> 2016-2020<br>\$60,000 per year (funding for two students), for four years. Joint with the School of Informatics and Computing and the School of Medicine, Indiana University.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| AWARDS<br>AND<br>HONORS | Appointed as a Fellow of the CIFAR program in Learning in Machines & Brains, 2025-2030.<br>Admitted as a Member of the College of New Scholars, Artists and Scientists, Royal Society of Canada, 2024 - 2030<br>AI Researcher of the Year Award, Women in AI Awards North America, 2023<br>Faculty of Science Research Award, University of Alberta, 2022<br>AIs 10 to Watch: The Future of AI, IEEE Intelligent Systems, 2020<br>Outstanding Reviewer Award, International Conference on Learning Representations (ICLR), 2021<br>Champion of Inclusion, School of Informatics and Computing, Indiana University, 2016<br>Reviewing Award, International Conference on Machine Learning (ICML), 2015<br>Faculty of Science Doctoral Dissertation Award, 2015<br>Honourable Mention for Best Paper at the International Conference on Machine Learning, 2009                                              |
| INVITED<br>TALKS        | [Invited Talk] <i>Safe Online Reinforcement Learning by Restricting the Environment</i> . Upper Bound. Edmonton, AB. May 2026.<br>[Industry Conference Talk] <i>Reinforcement Learning for Process Optimization in Water: Real-time Adaptation without Requiring Historical Data</i> . Water Conference of the West, American Water Works Associated (AWWA). San Diego, USA. April 2026.<br>[Workshop Talk] <i>Leveraging Traces for Efficient Learning</i> . CIFAR Learning in Machines and Brains Program meeting. Banff, AB. November, 2025.<br>[Invited Talk] <i>Reinforcement Learning for Process Optimization</i> . Western Canada Water Conference: Artificial Intelligence and Machine Applications Workshop. September 2025.<br>[Keynote] <i>Leveraging Traces for Continual Reinforcement Learning</i> . International Conference on Lifelong Learning Agents. Philadelphia, USA. August 2025. |

[Invited Talk] *Planning with Options, with speculations on intersections with programmatic RL*. Workshop on Programmatic Reinforcement Learning, at the Reinforcement Learning Conference. Edmonton, Canada. August 2025.

[Invited Talk] *Continual Reinforcement Learning for Process Control*. Workshop on Practical Insights into RL for Real Systems, at the Reinforcement Learning Conference. Edmonton, Canada. August 2025.

[Invited Talk] *Case Studies using Reinforcement Learning for Process Optimization*. Automation Expo and Conference. Edmonton, Canada. April 2025.

[Plenary Talk] *Better Experiments in Reinforcement Learning*. Reinforcement Learning Workshop at the Indian Institute of Science. Bengaluru, India. January 2025.

*Reinforcement Learning for Water Treatment*. Community Circle Workshop. November 2024.

[Keynote] *Reinforcement Learning for Adaptive Control in Water Treatment*. IEC TC65 2024 Automation Forum. Calgary, Canada. September 2024.

[Invited Talk] *Embracing Adaptive Control: Developing Sound Online Reinforcement Learning Algorithms*. RL and Control Theory Workshop at ICML. Vienna, Austria. July 2024.

[Invited Talk] *The Art of Possible - Focusing Artificial Intelligence Pilots on Water Systems Operation Outcomes*. Co-presented with Madjid Mohseni from UBC. 7th Annual Water Symposium and Trade Show. Ontario, Canada. April, 2024.

[Invited Talk] *Partial Models in Online Reinforcement Learning: Can Causality Help?* Continual Causality Bridge at AAAI. Vancouver, Canada. February 2024.

[Invited Talk] *Reinforcement Learning in the Real World: Making Predictions Online for Water Treatment*. Statistical Sciences Applied Research and Education Seminar (ARES). University of Toronto and CANSSI Ontario. October 2023.

[Keynote] *A New Policy Update for Actor-Critic Algorithms*. European Workshop on Reinforcement Learning. Brussels, Belgium. September 2023.

[Invited Talk] *Sparse Representations in Neural Networks for Better Online Updating*. ICLR 2023 Workshop on Sparsity in Neural Networks. Kigali, Rwanda. May 2023.

*Advances in Value Estimation in Reinforcement Learning*. DELTA Seminar at UCL. April 2023.

[Keynote] *Using Logged Data to Calibrate Online Reinforcement Learning Agents*. RL Alpes Symposium, March 2023.

*Developing Reinforcement Learning Agents that Learn Many Subtasks*. Apple Machine Learning Research Seminar AI, March 2023.

[Keynote] *Planning with Models Based on Value Functions*. Reinforcement Learning and Decision-Making Conference (RLDM), Providence, USA, June 2022.

[Keynote] *Reinforcement Learning: the Next Big Thing in AI*. AIWeek, Edmonton, May 2022

*Developing Reinforcement Learning Agents that Learn Many Subtasks*. Waterloo AI Institute Seminar, February 2022; at the UC Irvine CS Seminar, February 2022; and at TechAide Montreal, April 2022.

*Advances in Off-policy Value Estimation in Reinforcement Learning*. MIT Computational Sensorimotor Learning Seminar, November 2021; and at London Machine Learning Meetup, April 2022.

*Using Logged Data to Calibrate Online Reinforcement Learning Agents*. SIAM Symposium on Data-Driven Decision Control for Complex Systems, July 2021.

*A Generalized Objective for Off-policy Value Estimation in Reinforcement Learning*. CAIMS Annual Meeting, June 2021.

*Learning-to-learn with Recurrent Algorithms in Online Learning*. ELLIS Workshop on Meta-learning in AI and Cognitive Science, March 2021.

- Learning Representations for Reinforcement Learning.* Deep Learning 2.0 Virtual Summit, RE-WORK, January 2021.
- Generalizing the Projected Bellman Error Objective for Nonlinear Value Estimation.* Deep Reinforcement Learning, Theory of Reinforcement Learning, Simons Institute, September 2020.
- A New RNN Algorithm Using the Computational Inductive Bias of Span Independence.* Inductive Biases, Invariances and Generalization in RL, ICML Workshop, July 2020.
- An Off-policy Policy Gradient Theorem: A Tale About Weightings.* Theoretical Foundations of Reinforcement Learning, ICML Workshop, July 2020.
- Rethinking the Objective for Policy Optimization in Reinforcement Learning.* CAIDA Seminar Series, University of British Columbia, June 2020.
- Understanding Inductive Biases for Betrrl Agents.* Beyond Tabula Rasa in Reinforcement Learning Workshop (BeTR-RL), ICLR Workshop, April 2020.
- Model-Based Reinforcement Learning.* Reinforcement Learning Summer School, Edmonton, August 2019.
- Learning Representations for Continual Learning.* Multi-task and Lifelong Learning Workshop, ICML Workshop, Long Beach, June 2019.
- The Utility of Sparse Representations for Control in RL.* Deep Reinforcement Learning Workshop, NeurIPS Workshop, Montreal, December 2018.
- Another Laundry List for Continual Learning.* Continual Learning Workshop, NeurIPS Workshop, Montreal, December 2018.
- Off-policy Learning.* Reinforcement Learning Summer School, Toronto, August 2018.
- Upper Confidence Bounds on Action-Values.* Exploration in Reinforcement Learning, ICML Workshop, Sweden, July 2018.
- An RNN Architecture using Value Functions.* Credit assignment in Deep Learning and Deep Reinforcement Learning, ICML Workshop, Sweden, July 2018.
- Predictive representations.* Learning in Machines and Humans, Bloomington, USA, May 2018.
- Planning in reinforcement learning with learned models in Dyna.* Generative Models for Reinforcement Learning, Data Learning and Inference Workshop, Canary Islands, April 2018.
- General Value Function Networks.* The Barbados Workshop on Reinforcement Learning, Feb. 2018.
- Unifying task specification in reinforcement learning.* Oxford (Department colloquium), Imperial College London and Google Deepmind London, July 2017.
- Adapting kernel representations online using submodular maximization.* Washington University in St. Louis, Machine Learning colloquium, March 2017.
- Insights on learning representations with dictionary learning and autoencoders.* University of Maryland, Computational Linguistics and Information Processing colloquium, November 2016.
- Accelerated Gradient Temporal Difference Learning.* Presented at University of Texas at Austin, November 2016 and then again at the Multi-disciplinary Conference on Reinforcement Learning and Decision Making (RLDM), December 2016.
- Beyond experts and engineering: exploiting data for automated control.* Presented at multiple universities in 2014-2015, including University of Texas at Austin, University of Rochester, Virginia Tech, University of Virginia, Worcester Polytechnic Institute, University of Iowa, University of Connecticut and Dartmouth College.
- Generalized Optimal Reverse Prediction.* Google New York, August 2012
- Linear Off-Policy Actor Critic.* The 7th Barbados Workshop on RL, April 2012
- Learning a Value Analysis Tool For Agent Evaluation.* International Joint Conference of Artificial Intelligence, July 2009 and MITACS, June 2009

SUPERVISION **Post-Doctoral Fellows**

|                                                                                 |              |
|---------------------------------------------------------------------------------|--------------|
| Chen Fan                                                                        | 2026-present |
| Scott Jordan (now Visiting Assistant Professor at the University of Pittsburgh) | 2022-2024    |
| Lingwei Zhu (Project Researcher at the University of Tokyo )                    | 2022-2024    |
| Tadashi Kozuno (now Research Scientist at Omron Sinic X)                        | 2021-2022    |
| Yash Satsangi (now Assistant Professor at Tilburg University)                   | 2019-2020    |
| Ajin George Joseph (now Assistant Professor at IIT Tirupati)                    | 2018-2019    |
| Omid Namaki (now Lead Data Scientist for ATB)                                   | 2017-2019    |

**PhD students**

|                                                                                                                                                                                       |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Henry Du                                                                                                                                                                              | 2025-present |
| Esraa Elelimy                                                                                                                                                                         | 2023-present |
| Eric Graves                                                                                                                                                                           | 2020-present |
| Jiamin He                                                                                                                                                                             | 2024-present |
| Haseeb Shah                                                                                                                                                                           | 2024-present |
| Mahmut Tatlici                                                                                                                                                                        | 2026-present |
| Brett Daley ( <i>Multistep Credit Assignment in Deep Reinforcement Learning</i> , co-supervised by Marlos Machado, now Research Scientist at Meta)                                    | 2022-2025    |
| Ehsan Imani ( <i>Representation Alignment in Neural Networks</i> , now ML Engineer II at Spotify)                                                                                     | 2019-2024    |
| Andrew Jacobsen ( <i>Adapting to Non-stationarity in Online Learning</i> , co-supervised by Ashok Cutkosky, now post-doc at University of Milan with Nicolo Cesa-Bianchi)             | 2019-2024    |
| Raksha Kumaraswamy ( <i>Towards Sample-Efficient Control with Directed Exploration Under Linear Function Approximation</i> , now research scientist at Sony AI)                       | 2016-2021    |
| Lei Le ( <i>Identifying Tractable Dictionary Learning Models for Representation Learning</i> , now Senior ML Engineer at LinkedIn)                                                    | 2015-2019    |
| Vincent Liu ( <i>Towards Practical Offline Reinforcement Learning: Sample Efficient Policy Selection and Evaluation</i> , now ML Researcher at RBC Borealis)                          | 2019-2023    |
| Yangchen Pan ( <i>Improving Sample Efficiency of Online Temporal Difference Learning</i> , now Lecturer at the University of Oxford)                                                  | 2015-2021    |
| Andrew Patterson ( <i>Improving the reliability of reinforcement learning algorithms through biconjugate Bellman errors</i> , now Head of Technology at RLCore)                       | 2018-2023    |
| Matthew Schlegel ( <i>Leveraging Off-Policy Prediction in Recurrent Networks for Reinforcement Learning</i> , co-supervised by Adam White, now post-doc at the University of Calgary) | 2017-2023    |
| Han Wang ( <i>Stable and Efficient Online Reinforcement Learning using Offline Data</i> , co-supervised by Adam White, now research scientist at DeepRoute AI)                        | 2020-2025    |

**MSc students**

|                                                                                                                                                                                       |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Muhamad Arham                                                                                                                                                                         | 2025-present |
| Hui Jin                                                                                                                                                                               | 2026-present |
| Anastasiia Pedan                                                                                                                                                                      | 2025-present |
| Sara Shehada                                                                                                                                                                          | 2026-present |
| Shivani Singal                                                                                                                                                                        | 2026-present |
| Aditya Soni                                                                                                                                                                           | 2025-present |
| Pranaya Jajoo (starting ML Scientist role in Fall 2026)                                                                                                                               | 2024-2026    |
| Matthew Vandergrift (starting PhD at Oxford in Fall 2026)                                                                                                                             | 2024-2026    |
| Reza Ghasemi ( <i>Investigating Start-State Resetting Algorithms for Solving Simulators with Reinforcement Learning</i> , now Data Scientist for MedWatch)                            | 2024-2025    |
| Anna Hakhverdyan ( <i>Accounting for Hyperparameter Tuning in Online Reinforcement Learning</i> , now PhD at Brown University)                                                        | 2023-2024    |
| Olya Mastikhina ( <i>Examining Bio-Inspired Approaches for Continual Reinforcement Learning</i> , now PhD at McGill University)                                                       | 2023-2024    |
| Golnaz Mesbahi ( <i>K-percent Evaluation for Lifelong Reinforcement Learning</i> , co-supervised by Adam White, now ML Engineer at Amii)                                              | 2023-2024    |
| Kevin Roice ( <i>Goal Space Planning with Reward Shaping</i> , co-supervised by Adam White, now ML Engineer at Amii)                                                                  | 2023-2024    |
| Zaheer Abbas ( <i>Selective Dyna-style Planning Using Neural Network Models with Limited Capacity</i> , co-supervised Erin Talvitie, now Senior Research Engineer at Google DeepMind) | 2017-2019    |
| Farzane Aminmansour ( <i>Inferring Brain Connectomes via Group-Sparse Factorization</i> , co-supervised Russ Greiner, now PhD at University of Alberta with Rich Sutton)              | 2018-2020    |

|                                                                                                                                                                                                                              |           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Alvina Awwal ( <i>Directly Learning Predictors on Missing Data with Neural Networks</i> , now business analyst at Rohit Group)                                                                                               | 2022-2023 |
| Kirby Banman ( <i>Strange springs in many dimensions: how parametric resonance can explain divergence under covariate shift</i> , now AI Engineer at Jobber)                                                                 | 2020-2021 |
| James Bell ( <i>Electrodiagnostic Nerve Tests: Understanding Healthy Peripheral Nerves</i> , co-supervised Kelvin James, now Staff ML Engineer at Lime)                                                                      | 2017-2019 |
| Alan Chan ( <i>Greedification Operators for Policy Optimization: Investigating Forward and Reverse KL Divergences</i> , now Research Fellow at GovAI in the UK)                                                              | 2019-2020 |
| Wesley Chung ( <i>Two-Timescale Networks for Nonlinear Value Function Approximation</i> , now PhD at McGill University)                                                                                                      | 2017-2019 |
| Esraa Elelimy ( <i>Real Time Recurrent Learning with Complex-valued Trace Units</i> )                                                                                                                                        | 2022-2023 |
| Shivam Garg ( <i>Analysis of an Alternate Policy Gradient Estimator for Softmax Policies</i> , co-supervised Rupam Mahmood, CAIAC 2022 Best Masters Thesis Award, now PhD at University of Alberta)                          | 2020-2021 |
| Dhawal Gupta ( <i>Structural Credit Assignment in Neural Networks using Reinforcement Learning</i> , now PhD at UMass)                                                                                                       | 2020-2021 |
| Maryam Hashemzadeh ( <i>How Brain-Like is an LSTM's Representation of Nonsensical Language Stimuli?</i> , co-supervised Alona Fyshe, now PhD at Mila)                                                                        | 2019-2021 |
| Ehsan Imani ( <i>Distributional Losses for Regression</i> )                                                                                                                                                                  | 2017-2019 |
| Andrew Jacobsen ( <i>Meta-descent for online, continual prediction</i> , co-supervised Adam White)                                                                                                                           | 2018-2019 |
| Taher Jaferjee ( <i>Chasing Hallucinated Value: A Pitfall of Dyna Style Algorithms with Imperfect Environment Models</i> , co-supervised Michael Bowling, now ML Engineer at Huawei)                                         | 2017-2019 |
| Kamran Janjua ( <i>Online Predictions, RL and Water Treatment: A GVF Story</i> , now ML Engineer at Huawei)                                                                                                                  | 2022-2023 |
| Khurram Javed ( <i>Learning Online-Aware Representations using Neural Networks</i> , Research Scientist at Keen Technologies)                                                                                                | 2019-2020 |
| Sungsu Lim ( <i>Actor-Expert: A Framework for using Q-learning in Continuous Action Spaces</i> , now ML Engineer at Tonal)                                                                                                   | 2017-2019 |
| Vincent Liu ( <i>Sparse Representations for Reinforcement Learning</i> )                                                                                                                                                     | 2017-2019 |
| Chunlok Lo ( <i>Goal-Space Planning with Subgoal Models</i> , now SWE at Riot Games)                                                                                                                                         | 2021-2022 |
| Erfan Miah ( <i>Measuring the Properties of Deep RL Representations that Do and Do Not Generalize Well</i> , co-supervised Marlos Machado, now ML Engineer at Covenant AI)                                                   | 2021-2022 |
| Gabor Mihucz ( <i>Dyna with Options: Incorporating Temporal Abstraction into Planning</i> , now PhD at University of Alberta with Csaba Szepesvari)                                                                          | 2021-2022 |
| Somjit Nath ( <i>Fixed-Point Propagation for Recurrent Neural Networks</i> , now PhD at McGill University)                                                                                                                   | 2017-2019 |
| Ndidi Obinwanne ( <i>Investigating Feature Importance in Educational Data, Towards Handling Data Missingness In Classification Tasks</i> , co-supervised Carrie Demmans Epp, now Co-founder and CTO of Ballpark Development) | 2022-2024 |
| Andrew Patterson                                                                                                                                                                                                             | 2017-2018 |
| Matthew Schlegel                                                                                                                                                                                                             | 2016-2017 |
| Haseeb Shah ( <i>Greedy Pruning for Continually Adapting Networks</i> )                                                                                                                                                      | 2021-2023 |
| Hugo Luis Andrade Silva ( <i>What to do when your discrete optimization is the size of a neural network?</i> , now ML Engineer at Huawei)                                                                                    | 2021-2023 |
| Sam Sokota ( <i>Solving Common-Payoff Games with Approximate Policy Iteration</i> , co-supervised Marc Lanctot, now PhD at CMU)                                                                                              | 2019-2020 |
| Abdul Wahab ( <i>Value Bonuses Using Ensemble Errors For Exploration in Reinforcement Learning</i> , now ML Scientist at Amii)                                                                                               | 2022-2023 |
| Han Wang ( <i>Emergent Representations in Reinforcement Learning and Their Properties</i> , co-supervised Adam White)                                                                                                        | 2018-2020 |
| Niko Yasui ( <i>An Empirical Study of Exploration Strategies for Model-Free Reinforcement Learning</i> , now ML Resident at Amii)                                                                                            | 2017-2019 |

**Undergraduate researchers** Xinjia Fan (2026), Aldo Furlani (2026), Ray Shu (2026), Kai Luedemann (2023), Sam Scholnick-Hughes (2023), Thang Chu (2022), Robert Joseph (2022), Vlad Tkachuk (2021), Shaurya Seth (2021), Zonglun Li (2021), Victor Liao (2020-2021), Xinman Liu (2020, Now MSc at U Toronto), Matthew Regehr (2020, now MSc at U Toronto), Minghan Li (2019, now PhD at U Toronto), Jian Qian (2018, now PhD at MIT), Andrew Jacobsen (2018), Wenzhang Qian (2017), Andrew Patterson

(2015-2017), Abraham Dasilvio (2016), Tyrese Taylor (2016)

**Supervisory committee (PhD):** Juan Hernandez Garcia (2026), Qinfeng Lan (2025), Manan Tomar (2025), Khurram Javed (2024), Kenny Young (2024), Yi Wan (2023), Nadia Ady (2023), Sara Elkerdawy (2022), Sina Ghiassian (2022), Negar Hassanpour (2022), Chenjun Xiao (2022), Jincheng Mei (2021), Mahdi Karami (2020), Madhavun Candadai Vasu (2020, IU), Katherine Metcalf (2019, IU), Jiecao Chen (2019, IU), Pegah Fakhari (2018, IU), Shantanu Jain (2018, IU), Jeffrey Kane Johnson (2017, IU), Samuel Neumann, Roshan Shariff, Prabhat Nagarajan, Vincent Zhang, Yuqiao Wen

**Examining committee (PhD):** Adnan Mohamed (2026, University of Calgary), Veronica Chelu (McGill, 2025), Thomas Carta (Inria Bordeaux, 2025), Safa Alver (McGill, 2024), Ivo Danihelka (UCL, 2023), Charline Le Lan (Oxford, 2023), Leonhard Hussenot (INRIA, 2022), Emmanuel Bengio (McGill, 2022), Khimya Khetarpal (McGill, 2022), Anjana Puliyaanda (2022), Nino Vieliard (INRIA, 2022), Maximilian Igl (Oxford, 2021), Mao Li (UIUC, 2021), Amy Zhang (McGill, 2021), Jinnie Shin (2021), Samuele Tosatto (TU Darmstadt, 2020), Adam Earle (Witwatersrand, 2019), Michael Mitchley (Witwatersrand, 2015)

|                     |                                                                                                                                                                                                                                                        |                             |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| TEACHING            | CMPUT 467: Machine Learning II                                                                                                                                                                                                                         | Winter 2025, 2026.          |
|                     | CMPUT 655: Reinforcement Learning I                                                                                                                                                                                                                    | Fall 2020, 2025             |
|                     | Taught 65 graduate students about fundamentals in RL and research in RL.                                                                                                                                                                               |                             |
|                     | CMPUT 267: Basics of Machine Learning                                                                                                                                                                                                                  | Winter 2020-2023, Fall 2021 |
|                     | University of Alberta. Developed this first course, for a planned stream in Machine Learning. Now renamed Machine Learning I.                                                                                                                          |                             |
|                     | CMPUT 367: Intermediate Machine Learning                                                                                                                                                                                                               | Fall 2021, 2022             |
|                     | Developed this second course, for a planned stream in Machine Learning. Converted into CMPUT 467.                                                                                                                                                      |                             |
|                     | Developed a Reinforcement Learning MOOC, on Coursera                                                                                                                                                                                                   | 2019                        |
|                     | 80,000+ students registered online.                                                                                                                                                                                                                    |                             |
|                     | CMPUT 365: Reinforcement Learning                                                                                                                                                                                                                      | Fall 2019, 2020             |
| ACADEMIC<br>SERVICE | Developed and introduced this new undergraduate course, based on the MOOC.                                                                                                                                                                             |                             |
|                     | CMPUT 466/551: Machine Learning                                                                                                                                                                                                                        | Fall 2017, 2018, 2019       |
|                     | CMPUT 659: Optimization Principles for Reinforcement Learning                                                                                                                                                                                          | Winter 2018, 2019           |
|                     | Indiana University: CSCI B455 Principles of Machine Learning (Spring 2017), CSCI B555 Machine Learning (Fall 2015, 2016), CSCI B659 Stochastic optimization for machine learning (Spring 2016), CSCI B554 Probabilistic Approaches to AI (Spring 2015) |                             |
|                     | <b>Board Member for the Reinforcement Learning Conference</b>                                                                                                                                                                                          | 2024-2027                   |
|                     | <b>Local Organizer for the Reinforcement Learning Conference</b>                                                                                                                                                                                       | 2025                        |
|                     | <b>Action Editor for JMLR</b>                                                                                                                                                                                                                          | 2022-present                |
|                     | <b>Action Editor for TMLR</b>                                                                                                                                                                                                                          | 2022-present                |
|                     | <b>Program Co-Chair for the Reinforcement Learning Conference</b>                                                                                                                                                                                      | 2024                        |
|                     | <b>Associate Editor for TPAMI</b>                                                                                                                                                                                                                      | 2020-2023                   |
|                     | <b>Board Member for the Int. Conf. on Learning Representations (ICLR)</b>                                                                                                                                                                              | 2020-2023                   |
|                     | <b>Program Co-Chair for ICLR</b> with Shakir Mohamed, Kyunghyun Cho, Dawn Song                                                                                                                                                                         | 2019-2020                   |
|                     | First ML conference to go virtual for 2020; many later conferences built on strategies we introduced                                                                                                                                                   |                             |
|                     | <b>Senior Area Chair</b>                                                                                                                                                                                                                               | 2021-2023                   |
|                     | Advances in Neural Information Processing Systems (NeurIPS), 2022                                                                                                                                                                                      |                             |
|                     | International Conference on Learning Representations (ICLR), 2022                                                                                                                                                                                      |                             |

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
|            | <b>Area Chair</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2018-2023       |
|            | International Conference on Machine Learning (ICML), 2018-2021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |
|            | Advances in Neural Information Processing Systems (NeurIPS), 2018, 2020-2021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |
|            | International Conference on Learning Representations (ICLR), 2018, 2019, 2021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |
|            | AAAI Conference on Artificial Intelligence (AAAI), 2018, 2019                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |
|            | <b>Program Committee Member (Reviewer)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2009-present    |
|            | <b>Conferences:</b> AAAI, AISTATS, AAMAS, ICLR, ICML, IJCAI, NeurIPS, UAI, CORL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |
|            | <b>Journals:</b> PNAS 2019-2020; Nature 2019; Nature Machine Intelligence 2022; Royal Statistical Society 2022, Journal of Machine Learning Research, 2014-2017,2021; Machine Learning Journal, 2014, 2018-2020; Journal of Artificial Intelligence Research, 2014, 2016-2018,2021-2023; Artificial Intelligence Journal, 2014,2021; Journal of Autonomous Agents and Multi-agent Systems, 2016; Transactions on Image Processing, 2014; IEEE Transactions on Neural Networks and Learning Systems, 2014; Stochastic Environmental Research and Risk Assessment, 2017 |                 |
|            | <b>Workshop and Tutorial Organization</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2019-2022       |
|            | Deep Reinforcement Learning Workshop, NeurIPS, 2021, 2022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |
|            | Self-Supervision for Reinforcement Learning, ICLR 2021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |
|            | Policy Optimization in Reinforcement Learning Tutorial, NeurIPS, 2020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |
|            | NeurIPS Optimization in RL Workshop, 2019                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |
|            | ICML Exploration in RL Workshop, 2019, 2020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |
|            | RLDM Curiosity and Intrinsic Motivation Workshop, 2019                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |
|            | <b>Member of the Task Force on Knowledge System Resilience, by the Royal Society of Canada</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2025            |
|            | <b>CIFAR Global Scholars Program Reviewer</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 2025            |
|            | <b>NSERC Reviewer</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2018-present    |
|            | Discovery Grants, MITACS grants                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |
|            | <b>NSF panel member</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2015, 2016      |
|            | Reviewed IIS: Robust Intelligence (RI) proposals on Machine Learning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |
| UNIVERSITY | <b>University Service at the University of Alberta</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |
| SERVICE    | Hiring Committees for AI Cohort Hire                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2023-2025       |
|            | Faculty Evaluation Committee, for the Faculty of Science                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2020-2022       |
|            | Data Science Program Committee Member, joint between MSS and CS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2020-2022       |
|            | AI4Society Signature Area                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2019-2022       |
|            | Help manage the cross-department Statistical Machine Learning (SML) program                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2018-present    |
|            | Service roles within Amii: Fellows Membership Committee (FMC) to nominate members and CCAI Chairs (2019-2023), Chair of FMC from 2021-2023, Resource Allocation Committee (2018-2019), Advisory Committee to CEO (2018-2020)                                                                                                                                                                                                                                                                                                                                          |                 |
|            | <b>Departmental Service at the University of Alberta</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |
|            | AI Curriculum Committee                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2020-present    |
|            | - Introduced AI Certificate, including course redesign                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |
|            | - Developing an MSc in AI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |
|            | Faculty Recruiting Committee                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2017-2020, 2023 |
|            | Data Science Curriculum design                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2019-2020       |
|            | - Designed and continue to teach the first two courses in a stream of three                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |
|            | <b>University Service at Indiana University</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |
|            | Faculty Hiring Committee for Statistics (consulting role)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2015-2016       |
|            | Panel for new PhD Students                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2016            |
|            | Panel for Women in Computing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2015            |
|            | <b>Departmental Service at Indiana University</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |
|            | Faculty Affairs Committee                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2016-present    |
|            | Undergraduate Education Committee                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2016-present    |

- Redesigned Artificial Intelligence specialization for undergrads
  - Introduced two courses, Data Mining (B365) and Machine Learning (B455)
- Faculty Hiring Committee 2015-2016

OUTREACH **Mentoring**

- Lecture at Deep RL Course for Sharif University, *Continual Reinforcement Learning in the Real World*.  
June 2025
- Lectures at the AI4Good Summer Lab 2019-2023
- Reviewing Mentor for ICLR 2022
- Mentor at the Women in Machine Learning (WIML) luncheon 2017, 2019

**Workshops for youth**

- Pilot to develop Computing Camps for Aboriginal students in high school 2018-2019
- Presented to high school students about life as an undergraduate and graduate student in Computing Science (WP Wagner panel for Physical Sciences). 2011
- Volunteered for a Women in Scholarship, Engineering, Science and Technology (WISEST) open house promoting diversity in Computing Science. 2011
- Read to grade 3-6 students for a Read-In program promoting literacy. 2010
- Held a workshop for junior high girls illustrating interesting aspects of theoretical Computing Science, under Women in Technology (WIT). 2007

**Tutor**

- Tutoring children in an aboriginal high school with Frontier College. 2013
- Tutored children from grades 1 to 12 and first year university in mathematics, physics, statistics, chemistry, biology, English and French. 2006
- Tutored grade 5 girls in mathematics for the *Studdy Buddy Program*. 2005

INDUSTRIAL **CTO of RL Core Technologies.**

2026-present

EXPERI-  
ENCE

**CEO of RL Core Technologies.**

2023-2026

**Technical Board for Awenyx, successful exit.**

2021-2025

**Software Engineering Internship at Google.**

Summer 2012

**PFM Scheduling company.**

2010-2012

Part of the initial technical team for nurse scheduling for Alberta Health Services, that led to the spin-off for this company. <http://pfmscheduling.com>