
Associate Professor
Department of Computing Science
University of Alberta
Edmonton, Alberta

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RESEARCH INTERESTS **Reinforcement learning**, representation learning, time series prediction.

ACADEMIC POSITIONS **Associate Professor** 2019-present
Department of Computing Science, Faculty of Science, University of Alberta

Assistant Professor 2017-2019
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: Professor Michael Bowling and Professor 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 MSc, PhD and Post-doctoral.

- [1] Understanding and Mitigating the Limitations of Prioritized Replay. J. Mei, Y. Pan, A. Farahmand, H. Yao, M. White. *Uncertainty in Artificial Intelligence (UAI)*, 2022.
- [2] 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.
- [3] 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.
- [4] 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.
- [5] 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.
- [6] 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.
- [7] 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.
- [8] 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.

- [9] General Value Function Networks. [M. Schlegel](#), [A. Jacobsen](#), [Z. Abbas](#), [A. Patterson](#), A. White and M. White. *Journal of AI Research (JAIR)*, 2021.
- [10] 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.
- [11] Towards Safe Policy Improvement for Non-Stationary MDPs. [Y. Chandak](#), [S. Jordan](#), [G. Theocharous](#), [M. White](#), [P. S. Thomas](#). *Advances in Neural Information Processing Systems (NeurIPS)*, 2020.
- [12] 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.
- [13] 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.
- [14] 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.
- [15] Selective Dyna-style Planning Under Limited Model Capacity. [M. Zaheer](#), [S. Sokota](#), [E. Talvitie](#) and [M. White](#). *International Conference on Machine Learning (ICML)*, 2020.
- [16] Optimizing for the Future in Non-Stationary MDPs. [Y. Chandak](#), [G. Theocharous](#), [S. Shankar](#), [M. White](#), [S. Mahadevan](#), [P. S. Thomas](#). *International Conference on Machine Learning (ICML)*, 2020.
- [17] 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.
- [18] 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.
- [19] 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.
- [20] Meta-Learning Representations for Continual Learning. [K. Javed](#) and [M. White](#). *Advances in Neural Information Processing Systems (NeurIPS)*, 2019.
- [21] 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.
- [22] 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.
- [23] Planning with Expectation Models. [Y. Wan](#), [M. Zaheer](#), [A. White](#), [M. White](#) and [R. S. Sutton](#). *International Joint Conference on Artificial Intelligence (IJCAI)*, 2019.
- [24] 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.
- [25] Two-Timescale Networks for Nonlinear Value Function Approximation. [W. Chung](#), [S. Nath](#), [A. Joseph](#) and [M. White](#). *International Conference on Learning Representations (ICLR)*, 2019.
- [26] 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.
- [27] 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.
- [28] An Off-policy Policy Gradient Theorem Using Emphatic Weightings. [E. Imani](#), [E. Graves](#) and [M. White](#). *Advances in Neural Information Processing Systems (NeurIPS)*, 2018.

- [29] Supervised autoencoders: Improving generalization performance with unsupervised regularizers. [L. Le](#), [A. Patterson](#) and M. White. *Advances in Neural Information Processing Systems (NeurIPS)*, 2018.
- [30] 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.
- [31] Improving Regression Performance with Distributional Losses. [E. Imani](#) and M. White. *International Conference on Machine Learning (ICML)*, 2018.
- [32] 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.
- [33] Organizing experience: a deeper look at replay mechanisms for sample-based planning in continuous state domains. [Y. Pan](#), [M. Zaheer](#), A. White, [A. Patterson](#), M. White. *International Joint Conference on Artificial Intelligence (IJCAI)*, 2018.
- [34] High-confidence error estimates for learned value functions. T. Sajed, [W. Chung](#) and M. White. *Uncertainty in Artificial Intelligence (UAI)*, 2018.
- [35] 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.
- [36] 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.
- [37] Unifying task specification in reinforcement learning. M. White. *International Conference on Machine Learning (ICML)*, 2017.
- [38] Adapting kernel representations online using submodular maximization. [M. Schlegel](#), [Y. Pan](#) and M. White. *International Conference on Machine Learning (ICML)*, 2017.
- [39] Effective sketching methods for value function approximation. [Y. Pan](#), E. Sadeqi Azer and Martha White. *International Conference on Uncertainty in AI (UAI)*, 2017.
- [40] Learning sparse representations in reinforcement learning with sparse coding. [L. Le](#), [R. Kumaraswamy](#), and M. White. *International Joint Conference on Artificial Intelligence (IJCAI)*, 2017.
- [41] Accelerated Gradient Temporal Difference Learning. [Y. Pan](#), A. White and M. White. *AAAI Conference on Artificial Intelligence (AAAI)*, 2017.
- [42] Recovering true classifier performance in positive-unlabeled learning. S. Jain, M. White, P. Radivojac. *AAAI Conference on Artificial Intelligence (AAAI)*, 2017.
- [43] 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.
- [44] Investigating practical, linear temporal difference learning. A. White and M. White. *International Conference on Autonomous Agents and Multi-agent Systems (AAMAS)*, 2016.
- [45] 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.
- [46] Incremental Truncated LSTD. C. Gehring, [Y. Pan](#) and M. White. *International Joint Conference on Artificial Intelligence (IJCAI)*, 2016.
- [47] 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.

- [48] Scalable Metric Learning for Co-embedding. F. Mirzazadeh, M. White, A. Gyorgy and D. Schuurmans. *In ECML PKDD*, 2015.
- [49] Optimal Estimation of Multivariate ARMA Models. M. White, J. Wen, M. Bowling and D. Schuurmans. *AAAI Conference on Artificial Intelligence (AAAI)*, 2015.
- [50] Partition Tree Weighting. J. Veness, M. White, M. Bowling, and A. Gyorgy. *Data Compression Conference*, 2013.
- [51] Convex Multiview Subspace Learning. M. White, Y. Yu, X. Zhang, D. Schuurmans. *Advances in Neural Information Processing Systems (NeurIPS)*, 2012.
- [52] Off-Policy Actor-Critic. T. Degris, M. White and R. S. Sutton. *International Conference on Machine Learning(ICML)*, 2012.
- [53] Generalized Optimal Reverse Prediction. M. White and D. Schuurmans. *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2012.
- [54] 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.
- [55] Interval Estimation for Reinforcement-Learning Algorithms in Continuous-State Domains. M. White and A. White. *Advances in Neural Information Processing Systems (NeurIPS)*, 2010.
- [56] 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.
- [57] 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**
- [58] Learning a Value Analysis Tool For Agent Evaluation. M. White and M.I 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	<p>Killam Accelerator Research Award. 2021-2024 \$225,000 in research funding for three years.</p> <p>Canada CIFAR AI (CCAI) Chair. 2018-2023 \$650,000 in research funding for five years.</p> <p>Compute Canada Resource Allocation Grant. 2019-2022 \$100,000 per year in additional computing resources on Compute Canada clusters.</p> <p>NSERC Discovery Grant and Discovery Accelerator. 2018-2021 \$120,000 + 150,000 total for three years. Sole PI. "Sparse representations for reinforcement learning."</p> <p>NSERC CRD 2018-2021 \$536,700 over 3 years. Sole PI. "Optimizing water treatment operation using reinforcement learning."</p> <p>NSF CISE CRII grant. 2016-2018 \$174,616 over two years. Sole PI. "Accelerated stochastic approximation for reinforcement learning."</p> <p>Precision Health Initiative. 2016-2020 \$60,000 per year (funding for two students), for four years. Joint with the School of Informatics and Computing and the School of Medicine.</p>
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- AWARDS Faculty of Science Research Award, 2022
- AIs 10 to Watch: The Future of AI, IEEE Intelligent Systems, 2020
- University of Alberta Killam Accelerator Research Award, 2020
- Outstanding Reviewer Award, International Conference on Learning Representations (ICLR), 2021
- Canada CIFAR AI Chair, 2018
- Champion of Inclusion, School of Informatics and Computing, Indiana University, 2016
- Reviewing Award, International Conference on Machine Learning (ICML), 2015
- Faculty of Science Doctoral Dissertation Award, 2015
- Honourable Mention for Best Paper at the International Conference on Machine Learning, 2009
- INVITED TALKS *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, REWORK, 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.
- Using Auxiliary Variables to Train Recurrent Neural Networks.* AI for Good Summer Lab, Montreal, 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

ACADEMIC SERVICE	<p>Associate Editor for TPAMI 2020-present</p> <p>Action Editor for TMLR 2022-present</p> <p>Board Member for the Int. Conf. on Learning Representations (ICLR) 2020-present</p> <p>Program Co-Chair for ICLR 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</p> <p>Area Chair 2018-present 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</p> <p>Program Committee Member (Reviewer) 2009-present Conferences: AAAI, AISTATS, AAMAS, ICLR, ICML, IJCAI, NeurIPS, UAI, CORL Journals: 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, 2016-2018,2021,2022</p>
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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

Workshop and Tutorial Organization 2019-present

Deep Reinforcement Learning Workshop, NeurIPS, 2021
 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

NSERC Reviewer 2018-present

Discovery Grants, MITACS grants

NSF panel member 2015, 2016

Reviewed IIS: Robust Intelligence (RI) proposals on Machine Learning

UNIVERSITY SERVICE University Service at the University of Alberta

Faculty Evaluation Committee, for the Faculty of Science 2020-2022
 Data Science Program Committee Member, joint between MSS and CS 2020-2021
 AI4Society Signature Area 2019-present
 Help manage the cross-department Statistical Machine Learning (SML) program 2018-present
 Service roles within Amii: Fellows Membership Committee to nominate members and CCAI Chairs (2019-2022), Budgeting Committee (2018), Advisory Committee to CEO (2018-2020)

Departmental Service at the University of Alberta

AI Curriculum Committee 2020-present
 - Introduced AI Certificate, including course redesign
 - Developing an MSc in AI
 Faculty Recruiting Committee 2017-2020
 Data Science Curriculum design 2019-2020
 - Designed and continue to teach the first two courses in a stream of three

University Service at Indiana University

Faculty Hiring Committee for Statistics (consulting role) 2015-2016
 Panel for new Phd Students 2016
 Panel for Women in Computing 2015

Departmental Service at Indiana University

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

SUPERVISION Post-Doctoral Fellows

Tadashi Kozuno 2021-present
 Lingwei Zhu 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

Farzane Aminmansour 2020-present
 Ehsan Imani 2019-present

Andrew Jacobsen	2019-present
Vincent Liu	2019-present
Prabhat Nagarajan	2021-present
Andrew Patterson	2018-present
Matthew Schlegel	2017-present
Han Wang	2020-present
Raksha Kumaraswamy (<i>Towards Sample-Efficient Control with Directed Exploration Under Linear Function Approximation</i>)	2016-2021
Lei Le (<i>Identifying Tractable Dictionary Learning Models for Representation Learning</i>)	2015-2019
Yangchen Pan (<i>Improving Sample Efficiency of Online Temporal Difference Learning</i>)	2015-2021

MSc students

Alvina Awwal	2022-present
Kamran Janjua	2022-present
Chunlok Lo	2021-present
Hugo Luis Silva	2021-present
Gabor Mihucz	2021-present
Erfan Miah	2021-present
Ndidi Obinwanne	2022-present
Haseeb Shah	2021-present
Abdul Wahab	2022-present
Farzane Aminmansour (<i>Inferring Brain Connectomes via Group-Sparse Factorization</i>)	2018-2020
Kirby Banman (<i>Strange springs in many dimensions: how parametric resonance can explain divergence under covariate shift</i>)	2020-2021
James Bell (<i>Electrodiagnostic Nerve Tests: Understanding Healthy Peripheral Nerves</i> , co-supervised Kelvin James)	2017-2019
Alan Chan (<i>Greedification Operators for Policy Optimization: Investigating Forward and Reverse KL Divergences</i>)	2019-2020
Wesley Chung (<i>Two-Timescale Networks for Nonlinear Value Function Approximation</i>)	2017-2019
Shivam Garg (<i>Analysis of an Alternate Policy Gradient Estimator for Softmax Policies</i>)	2020-2021
Dhawal Gupta (<i>Structural Credit Assignment in Neural Networks using Reinforcement Learning</i>)	2020-2021
Maryam Hashemzadeh (<i>How Brain-Like is an LSTM's Representation of Nonsensical Language Stimuli?</i>)	2019-2021
Ehsan Imani (<i>Distributional Losses for Regression</i>)	2017-2019
Andrew Jacobsen (<i>Meta-descent for online, continual prediction</i>)	2018-2019
Taher Jaferfee (<i>Chasing Hallucinated Value: A Pitfall of Dyna Style Algorithms with Imperfect Environment Models</i>)	2017-2019
Khurram Javed (<i>Learning Online-Aware Representations using Neural Networks</i>)	2019-2020
Sungsu Lim (<i>Actor-Expert: A Framework for using Q-learning in Continuous Action Spaces</i>)	2017-2019
Vincent Liu (<i>Sparse Representations for Reinforcement Learning</i>)	2017-2019
Andrew Patterson	2017-2018
Somjit Nath (<i>Fixed-Point Propagation for Recurrent Neural Networks</i>)	2017-2019
Matthew Schlegel	2016-2017
Sam Sokota (<i>Solving Common-Payoff Games with Approximate Policy Iteration</i>)	2019-2020
Han Wang (<i>Emergent Representations in Reinforcement Learning and Their Properties</i>)	2018-present
Niko Yasui (<i>An Empirical Study of Exploration Strategies for Model-Free Reinforcement Learning</i>)	2017-2019
Zaheer Abbas (<i>Selective Dyna-style Planning Using Neural Network Models with Limited Capacity</i>)	2017-2019

Undergraduate researchers 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): Jiecao Chen (2019, IU), Jeffrey Kane Johnson (2017, IU), Pegah Fakhari (2018, IU), Shantanu Jain (2018, IU), Sina Ghiassian (2022), Mahdi Karami (2020), Jincheng Mei (2021), Katherine Metcalf (2019, IU), Madhavun Candadai Vasu (2020, IU), Nadia Ady, Chenjun Xiao, Juan Hernandez Garcia, Eric Graves, Roshan Shariff

Examining committee (PhD): Emmanuel Bengio (McGill, 2022), Adam Earle (Witwatersrand, 2019), Maximilian Igl (Oxford, 2021), Mao Li (UIUC, 2021), Michael Mitchley (Witwatersrand, 2015), Anjana Puliya (2022), Jinnie Shin (2021), Samuele Tosatto (TU Darmstadt, 2020), Amy Zhang (McGill, 2021)

TEACHING EXPERI- ENCE	CMPUT 267: Basics of Machine Learning	Winter 2020-2022, Fall 2021
	University of Alberta. Developed this first course, for a planned stream in Machine Learning.	
	CMPUT 396: Intermediate Machine Learning	Fall 2021
	Developed this second course, for a planned stream in Machine Learning.	
	Developed a Reinforcement Learning MOOC, on Coursera	
	50,000+ students registered online.	
	CMPUT 365: Reinforcement Learning	Fall 2019, 2020
	Developed and introduced this new undergraduate course, based on the MOOC.	
	CMPUT 655: Reinforcement Learning I	Fall 2020
	Taught 65 graduate students about fundamentals in RL and research in RL.	
	CMPUT 466/551: Machine Learning	Fall 2017, 2018, 2019
	CMPUT 659: Optimization Principles for Reinforcement Learning	Winter 2018, 2019
	CSCI B455: Principles of Machine Learning	Spring 2017 Indiana University.
	CSCI B555: Machine Learning	Fall 2015, 2016
CSCI B659: Stochastic optimization for machine learning	Spring 2016	
CSCI B554: Probabilistic Approaches to AI	Spring 2015	
OUTREACH	Mentoring	
	Mentor at the Women in Machine Learning (WIML) luncheon	2017, 2019
	Lectures at the AI4Good Summer Lab	2019-2021
	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 <i>Studdy Buddy Program</i> .	2005
	INDUSTRIAL EXPERI- ENCE	Technical Board for Awenyx.
2021		
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		