Alex Lewandowski

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Education

Ph.D. in Computing Science
University of Alberta — *2019 – Present*
- Supervisors: Dale Schuurmans, Marlos C. Machado
- Research Area: Continual learning, meta learning, reinforcement learning

M.Sc. in Statistics
University of Alberta — *2016 – 2018*
- Specialization: Statistical Machine Learning
- Supervisors: Ivor Cribben, Rohana Karunamuni
- Thesis: Recurrent and Bayesian Kernel Learning for Small Data with Applications to Neuroimaging

Honours Bachelor in Mathematics
University of Waterloo — *2012 – 2016*
- Major: Mathematical Economics

Papers & Preprints

Plastic Learning with Deep Fourier Features
A. Lewandowski, D. Schuurmans, M. C. Machado — *09/2024*
- Under review

The Need for a Big World Simulator: A Scientific Challenge for Continual Learning
S. Kumar, H. J. Jeon, **A. Lewandowski**, B. Van Roy — *08/2024*
- Finding The Frame Workshop at RLC (Oral Presentation)

Learning Continually by Spectral Regularization
A. Lewandowski, M. Bortkiewicz, S. Kumar, A. György, D. Schuurmans, M. Ostaszewski, M. C. Machado — *05/2024*
- Under review

Directions of Curvature as an Explanation for Loss of Plasticity
A. Lewandowski, H. Tanaka, D. Schuurmans, M. C. Machado — *11/2023*
- Preprint

Reinforcement Teaching
C. Muslimani*, **A. Lewandowski***, D. Schuurmans, M. Taylor, J. Luo — *06/2023*
- Transactions on Machine Learning Research

Disentangling Generalization in Reinforcement Learning with Contextual Decision Processes
A. Lewandowski, D. Schuurmans, J. Luo — *09/2021*
- Preprint

ZORB: A Derivative-Free Backpropagation Algorithm for Neural Networks
V. Ranganathan, **A. Lewandowski** — *12/2020*
- Beyond Backpropagation Workshop at Neurips (Oral Presentation)

Recurrent Open-loop Control in Offline Reinforcement Learning
A. Lewandowski, D. Schuurmans — *12/2020*
- Offline Reinforcement Learning Workshop at NeurIPS

Batch and Sequential Policy Optimization with Doubly Robust Objectives
A. Lewandowski, D. Schuurmans — *12/2019*
- Optimization Foundations of Reinforcement Learning Workshop at NeurIPS

Batch Normalized Deep Kernel Learning for Weight Uncertainty
A. Lewandowski — *12/2017*
- Bayesian Deep Learning Workshop at NIPS

Work Experience

Research Associate (Part-time), Noah's Ark Lab

Huawei Technologies Canada Co., Ltd. *2022 – 2023*

» Supervisor: Jun Luo
» Developed a reinforcement learning framework for meta-learning a teacher agent that can quickly train new student agents

Research Associate (Full-time), Noah's Ark Lab

Huawei Technologies Canada Co., Ltd. *2021 – 2022*

» Supervisor: Jun Luo
» Designed evaluation methodology for measuring the generalization capabilities of a reinforcement learning agent, with applications to autonomous vehicles

Teaching Assistant, Department of Computer Science

University of Alberta *2019 – Present*

» Facilitated discussion groups for a new reinforcement learning course, and developed worksheets to enhance student learning
» Provided mentorship and guidance for student projects in foundations of information retrieval

Teaching Assistant, Department of Mathematical and Statistical Sciences

University of Alberta *2016 – 2018*

» Conducted help sessions in Introduction to Applied Statistics, Statistics I/II, Applied Regression Analysis and Time Series Analysis.
» Offered personalized academic support to students in all first and second-year classes in mathematics and statistics at the Decima Robinson Support Centre

Honors & Awards

Alberta Innovates Graduate Student Scholarship
University of Alberta, Department of Computing Science 2022—2024

President's Doctoral Prize of Distinction
University of Alberta, Department of Computing Science 2021—2024

NSERC Postgraduate Scholarships – Doctoral
University of Alberta, Department of Computing Science 2021—2024

Josephine Mitchell Scholarship
University of Alberta, Department of Mathematical and Statistical Sciences 2017—2018

Profiling Alberta's Graduate Students Award
University of Alberta, Department of Mathematical and Statistical Sciences 2017

Queen Elizabeth II Graduate Scholarship
University of Alberta, Department of Mathematical and Statistical Sciences 2016

President's Scholarship
University of Waterloo 2012

Service

Organizer Openmind Research Institute Banff Retreat 2023-2024, ICLR SSBM Social 2021, NeurIPS SSBM Social 2020, ICLR Reinforcement Learning Social 2020

Reviewer RLC 2024, Finding the Frame Workshop at RLC 2024, ICML 2021-2024 (Outstanding Reviewer Award 2022), ICLR 2020-2024 (Outstanding Reviewer Award 2021-2022), NeurIPS 2021-2024 (Top Reviewer Award 2022), ICML RL4RealLife Workshop 2021, NeurIPS Offline RL Workshop 2021, OPTRL Workshop at NeurIPS 2019, TNNLS 2018-2019

University Academic Director at Computing Science Graduate Student Association 2022—2023