Alex Lewandowski

✉ lewandowski@ualberta.ca | 🏠 lewandowskialex.com | ⌨ AlexLewandowski

Research Interests

Reinforcement Learning Model-based, exploration
Deep Learning Generative models

Papers & Preprints

Bayesian and Recurrent Deep Kernel Learning

A. Lewandowski, I. Cribben *In Preparation*

Batch Normalized Deep Kernel Learning for Weight Uncertainty

A. Lewandowski *12/2017*

- Second workshop on Bayesian Deep Learning (NIPS 2017)

Wasserstein Style Transfer with Shared Critic

A. Lewandowski *In Preparation*

Projects

Hierarchical BiGAN using Wasserstein Distance and the Concrete Distribution

Topics in Deep Learning with Prof. Dale Schuurmans *1/2017 – 4/2017*

- Derived a Wasserstein formulation of bidirectional GANs and investigated hierarchical and discrete extensions.

Structured Adversarial Inference and Learning

Probabilistic Graphical Models with Prof. Russell Greiner *1/2017 – 4/2017*

- Proposed and implemented a method of inference in graphical models using adversarial networks.

Completing Tensors with Indian Buffet Processes

Introduction to Machine Learning with Prof. Russell Greiner *9/2016 – 12/2016*

- Extended an MCMC algorithm to estimate missing values in tensors using an Indian Buffet Process prior.

Exchange Rate Duration Under a Markov-Switching Multifractal: A GMM Approach

Supervised by Prof. Dinghai Xu *1/2016 – 4/2016*

- Derived a Generalized Method of Moments for the Markov-Switching Multifractal duration model.

Dealing with Zeros in Duration Data: A Nonparametric Approach

Topics in Econometrics with Prof. Tao Chen *1/2016 – 4/2016*

- Developed a nonparametric imputation method for duration data that leverages inherent long range dependencies.

Education

University of Alberta

Ph.D. in Statistical Machine Learning *01/2019 – Present*

- Supervisor: Dale Schuurmans

University of Alberta

MSc. in Statistical Machine Learning *09/2016 – 07/2018*

- Supervisors: Ivor Cribben & Rohana Karunamuni

University of Waterloo

Honours Bachelor in Mathematics *09/2012 – 09/2016*

- Major: Mathematical Economics

Work Experience

University of Alberta

Research Assistant, Department of Computer Science *08/2018 – Present*

- working on deep reinforcement learning

University of Alberta

Teaching Assistant *09/2016 – 04/2018*

- Lead help sessions in Introduction to Applied Statistics, assist with Statistics I/II, Applied Regression Analysis and Time Series Analysis.
- Provide one on one assistance with assignments for first and second year classes at the Decima Robinson Support Centre.

University of Alberta

Research Assistant, Department of Statistics *05/2017 – 07/2018*

- Implemented various Gaussian process and deep learning methods to classify patients based on fMRI data using TensorFlow.
- Developed stochastic variational methods for recurrent neural network parameterized kernels in Gaussian process classification.

Honors & Awards

Josephine Mitchell Scholarship
University of Alberta 2018

Profiling Alberta's Graduate Students Award
University of Alberta 2017

Josephine Mitchell Scholarship
University of Alberta 2017

Queen Elizabeth II Graduate Scholarship
University of Alberta 2016

Term Dean's Honour List
University of Waterloo 2015

President's Scholarship
University of Waterloo 2012