

Highlights

- 4 years of experience in machine learning through completion of master's degree in Statistical Machine Learning and work as a research associate in machine learning
- Advanced programming skills in Python with 3 years of experience using Tensorflow, Pytorch, Scikit-Learn, and Numpy
- Proven teamwork skills evidenced by multiple successful collaborations in developing and publishing research papers
- Polished presentation skills developed through weekly presentations at group meetings and non-technical public seminars
- Self-motivation to increase my knowledge of machine learning and improve my programming skills

Education

Master of Science in Statistical Machine Learning

Sept 2017 - Sept 2019

University of Alberta

Edmonton, AB

- Thesis: *Hallucinating Value: Pitfalls of Dyna-style Planning with Imperfect Environment Models*
- Courses: Machine Learning, Deep Learning, Statistics & Data Science, Reinforcement Learning, Optimisation for Reinforcement Learning
- GPA = 3.9 / 4.0
- Supervisors: Professor Michael Bowling and Professor Martha White

Honours Bachelor of Science in Computer Science

Sept 2009 - April 2010 & Sept 2012 - June 2015

University of Toronto

Toronto, ON

- Minor in Mathematics
- Note: degree interrupted for financial reasons

Technical Skills

Models & Algorithms: Deep Learning (Feed-forward, CNNs, RNNs), Reinforcement Learning, SVM, Decision Trees, Nearest-neighbours, Clustering, Regression

Programming Languages: Python, C, Bash, R, Julia, Haskell

Technologies: Pytorch, Tensorflow, Git, Matlab

Relevant Experience

Research Engineer in Autonomous Driving Lab

Feb 2019 - Present

Huawei Noah's Ark Lab

Edmonton, AB

- Conducted independent research to improve performance of deep reinforcement learning algorithms which led to development of novel neural network architecture that improved performance over baselines on OpenAI gym by up to 30%
- Collaborated with senior research scientists and research engineers to discuss, implement, and critique research ideas
- Implemented simple, efficient, and easily-extensible codebase in Pytorch for common deep reinforcement learning algorithms including DQN and DDQN (github.com/atlashugs/dqn_pytorch.git)
- Polished critical analysis and presentation skills by reading, analysing, and presenting research papers at weekly meetings

Graduate Research Assistant

Jan 2018 - Aug 2019

University of Alberta/Alberta Machine Intelligence Institute (Amii)

Edmonton, AB

- Implemented machine learning algorithms including neural networks, SVMs, decision trees, and regression models in Python and R for thesis and coursework
- Collaborated with peers to successfully publish workshop paper on RNNs to NeurIPS 2019
- Presented research at weekly group meetings and gave non-technical talks on AI to general public
- Developed and taught tutorial sessions for undergraduate courses where students' code was reviewed for correctness, style, and efficiency

Relevant Projects

Deep Reinforcement Learning on Atari

Jan 2018 - Nov 2018

- Developed deep reinforcement learning adaptation of Prioritised Sweeping algorithm
- Implemented DQN to learn value function, and RNN with convolutional layers to model game dynamics
- Optimised code performance by profiling with cProfile and selectively moving operations to CPU or GPU; led to 15% reduction required wall-clock time

Predicting Commodity Prices Using Time-Series Models

Jan 2019

- Developed ensemble of RNNs in Tensorflow to predict prices of agricultural commodities up to 4 weeks into the future.
- Performed extensive feature engineering to produce model with required accuracy

Other Experience

Cofounder / President

May 2017 - Dec 2017

Highcube Inc.

Toronto, ON

- Founded company to disrupt fleet telematics industry by applying predictive technology to optimise utilisation of vehicles
- Persuaded co-founders to leave full-time jobs and join the company
- Created core value proposition and business strategy by researching customer needs and identifying gaps in services provided by incumbents
- Compiled monthly financial statements for funders
- Raised \$10,000 in funding from Next Canada

Business Development Lead

May 2015 - Dec 2016

Natural Food Exports (Pvt) Ltd.

Colombo, Sri Lanka

- Led efforts to develop new markets in West Africa by optimising web presence, attending trade-shows, and cold-calling/cold-emailing potential clients
- Improved company website visibility on search engines using SEO resulting in 3x increase in web inquiries
- Established relationships with new customers in West Africa and negotiated contracts with them worth \$1.9 million
- Reported directly to director of sales to ensure sales targets were met

Publications

1. T. Jafferjee, E. Imani, E. J. Talvitie, M. White, M. Bowling. 2019. "Hallucinating Value: Pitfalls of Dyna-style Planning with Imperfect Environment Models". *Under review.*
2. S. Nath, T. Jafferjee, M. White. 2018. "On the Utilisation of Recursive Approximation for Faster Training of Recurrent Neural Networks". *NeurIPS 33, Continual Learning Workshop.*

Awards

SOCMLx (\$1000)

2019

Awarded full travel funding to attend SOCMLx 2019 to participate in workshops on frontiers of machine learning

Amii

DRLSS 2019

2019

Selected from among thousands of applicants to participate in lectures and workshops at Deep Learning & Reinforcement Learning Summer School 2019

CIFAR

NextAI 2017

2017

Selected from over 200 applicants into inaugural cohort of NextAI, a founder development program and startup incubator for AI focused companies

NEXT Canada

Dean's List

2015

Recognised for outstanding academic achievement in undergraduate degree.

University of Toronto

Leadership

Project Lead

2019

Led project to raise awareness of damaging greenhouse effects of improperly disposed refrigerants

Rotaract Club of Edmonton

Diversity Lead

2018-2019

Led workshops to help students and faculty identify and minimise unconscious bias.

Computer Science Graduate Student Association

Hobbies & Interests

Ultimate Frisbee (part of Edmonton competitive team), Olympic weightlifting, and social issues – particularly addressing youth homelessness and poverty