Christopher Leung

{Software} + {Engineer · Researcher}

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Skills

LANGUAGES	Python, Java, C++, Scala, C, R, Shell Script, SQL, VBA
TECHNOLOGIES	PyTorch, Tensorflow, Keras, scikit-learn, Storm, FlumeJava, Hadoop, Spark

Work Experience

OKTA
Software Engineer (Machine Learning)

Toronto, ON
June 2019 - Present

- Architected and presented a POC on a machine learning pipeline to detect cyberattacks on companies.
- Implemented and improved statistical and machine learning models to protect users against account takeover.
- Discovered an algorithm that beats the state-of-the-art anomaly detection algorithm in runtime and memory consumption while maintaining comparable accuracy (Patent pending).
- Extracted user typing patterns to detect anomalous users with deep learning models via Tensorflow.

GOOGLE
Software Engineer Intern

Mountain View, CA
Sept. 2018 - Dec. 2018

- Improved and optimized existing machine learning models to better detect malicious advertisers in Google Search. Impacted billions of users by increasing area under the precision-recall curve by at least 0.1%.
- Implemented a model that quickly responds to new malicious advertising attacks, trained on hundreds of millions of advertiser behavior samples using FlumeJava.

OKTA
Software Engineer Intern

Toronto, ON
May 2018 - Aug. 2018

- Discovered a model that can identify users through typing habits with an accuracy of over 94%.
- Integrated a typing pattern collection mechanism into both the Okta SSO product and data processing pipeline.
- Presented a proof of concept to stakeholders by using t-SNE dimensionality reduction on collected data.

IBM
Software Developer Co-op

Markham, ON
Sept. 2016 - Apr. 2017

- Implemented a mutex-like API to handle concurrent file access requests between multiple servers. Designed a system to pre-empt locks based off a time quantum to account for server failures.

Education

GEORGIA INSTITUTE OF TECHNOLOGY
Master of Science in Computer Science

In Progress

- Current Course: Reinforcement Learning

STANFORD UNIVERSITY
Professional Certificate in Artificial Intelligence

In Progress

- Graduate Courses Completed: NLP, NLU

UNIVERSITY OF WATERLOO
(Hons) Bachelor of Computer Science

June 2019

- Relevant Courses: Machine Learning, Artificial Intelligence, Learning Theory, Neural Networks

Research Projects

LISTENER-REASONING SPEAKER

Short Paper

Title: Pragmatic Learning via Listener-Reasoned Utterance Augmentation.

Submitted to EMNLP 2020

- Invented a neural learning technique that solves Stanford's Color Reference task with 94.5% accuracy, beating SOTA by 8%.
- Submitted for initial review at *EMNLP'20* as first author with the help of Dr. Christopher Potts.

COST-BALANCING CLUSTERING TREE

Long Paper

Title: Test-Cost Sensitive Methods for Identifying Nearby Points

Submitted to AAAI 2021

- Solved a new problem in budget-constrained data repair with a proposed Markov Decision Process framework.
- Introduced a novel algorithm for cost-based subspace clustering using a decision tree based method.
- Proposed deep reinforcement learning algorithm which outperforms random policies in the context of cost-based data repair.
- Submitted for initial review at *AAAI'21* as co-author with Kevin Hyun.