

JOHN CHEN

johntiger1.github.io
[in johnn-chen/](https://www.linkedin.com/in/johnn-chen/)

Skills

DATA SCIENCE

PyTorch
scikit-learn
PySpark
Tensorflow
xgboost
SparkSQL
NumPy
Pandas
nltk
SpaCy
matplotlib

FULL STACK PROGRAMMING

Javascript
Node.js
AngularJS
React
Python
C
Java
Bootstrap
PL/SQL
Postgres
MongoDB
C#

Education

University of Toronto	Sept. 2014 to Current
Bachelor's of Science in Computer Science 2019	
Focus in Artificial Intelligence, cGPA: 3.98/4.00	

University of Toronto	Sept. 2019 to Current
PhD in Computer Science 2023	
Research areas: Deep Learning and Natural Language Processing. Advised by Professor Frank Rudzicz	

Employment

Air Miles (a LoyaltyOne Company)	Toronto, Ontario
Data Science Intern	May 2019 to Aug. 2019

- Developed several machine learning models end-to-end, including flight redemption propensity model. FRP model achieved **0.97 AUC ROC**, and has **9x lift** compared to baseline. Improved model via **seasonality adjustments, model-free feature selection** algorithm and **model-based genetic feature selection** algorithm, as well as hyperparameter tuning via **Bayesian Optimization** using scikit-optimize. Model has been used in business and has delivered **40% e-mail cost savings** in an acquisition campaign targeting over **500 000 customers**.
- Research and development in recommendation engine prototype for leading Canadian grocery chain. Achieved **111% basket coverage improvement** over baseline by using market basket analysis and frequency-based model.

Vector Institute	Toronto, Ontario
Research Intern	June 2018 to Current

Developed and implemented several end-to-end deep learning solutions including:

- character-level recurrent neural network language model as part of industry partnership with DataX
- medical image captioning. **Doubled F1 performance** by reformulating problem as multilabel classification problem.
- paragraph-level style transfer in text (research ongoing)
- massively multilabel, highly imbalanced classification. **Improved F1 performance by 156% over baseline pretrained** network via image augmentation and finetuning.

University of Toronto	Sept. 2016 to Current
Teaching Assistant	

- TAed for **5 different courses**: CSC209 (Software Tools and Systems Programming), CSC263 (Data Structures and Analysis), CSC165 (Mathematical Expression and Reasoning for Computer Science), CSC324 (Functional Programming), and CSC420 (Computer Vision and Image Understanding)

Ontario Teachers' Pension Plan	Sept. 2017 to May 2018
Software Developer Intern, DevOps and Risk Analytics	

- Improved deployment set-up time by 30%** by developing full-stack RESTful C# Web API + AngularJS web app for managing UrbanCode agent and server registry information.
- Contributed to performance gains of 50x in financial software through developing hybrid Powershell/C# solution to automatically generate, format and send e-mail reports to senior management daily.

Centre for Computational Medicine at SickKids Hospital	May 2017 to Aug. 2017
Research Student	

- Awarded \$6000 NSERC research grant to conduct summer research into Bayesian networks to improve automatic disease diagnosis algorithm used in Phenotips web platform. **Sped up naive algorithm by 500x** via dynamic programming and multithreading.

Awards

Vector Research Grant · Vector Institute	June 2018
Awarded to conduct deep learning research under supervision of Dr. Frank Rudzicz	
1st Place, Cisco DevNet Hackathon · Cisco	June 2016
Created an IoT app for real-time monitoring of plants, using Cisco's Tropo VoIP service and Relayr API.	
Rotary Club of Toronto Community Champion Scholarship ·	June 2014
Rotary Club of Toronto and Toronto Argonauts	
Full tuition scholarship to University of Toronto	