

## PROFESSIONAL EXPERIENCE

CEO &  
Founder  
Jun 2017 – July 2020

### AIFOUNDED INC. – TORONTO

Connecting artificial intelligence and business, creating industry leading AI powered by a search engine. Licensing search engine to AI industry – providing commercial search engine API allowing users to customize AI agents that retrieve information. Top machine learning labs have conducted research and published papers using AIFounded search engine – with academic research successfully transferred over to development.

Participating in M&A process and leading due diligence efforts for clients. Also, sold software intellectual property

Top machine learning lab partnerships include: New York University, University of Montreal (MILA), and York University

Major AI clients include: Chatter Research, Clearview, and Incmind Inc.

AI Researcher  
Mar 2016 – July 2020

### HHMI, JANELIA RESEARCH CAMPUS, BRANSON LAB – VIRGINIA

AI researcher under the supervision of Dr. Kristin Branson – a world-renowned expert in computational biology, focused on the application of machine vision and learning to the problems of automatic animal tracking, supervised behavior detection, and unsupervised behavior mining.

Primary research: collaborating on animal social behaviors and their neural activities with top neuroscientists in the world

Other research: Biologically plausible learning, interactive & active metric learning, stochastic optimization methods, and GAN evaluation metric

CTO & Co-  
Founder  
Jan 2018 – October  
2019

### COINSCIOUS INC. – TORONTO

Lead Conscious to public IEO.

Created Conscious Terminal which is known as Bloomberg terminal for cryptocurrency market.

Developed all product and services, such as alert, report, and backtesting systems. Performed data analysis, technical analysis, and machine learning solutions for crypto market. Lead the customized solutions to major hedge funds like 3iQ.

Provided operational planning, legal, and administrative support. Put together the advisory board teams.

AI Researcher  
Apr 2015 – Mar 2016

UNIVERSITY OF MONTREAL, MILA – MONTREAL

AI Researcher under the supervision of Dr. Roland Memisevic and Dr. Yoshua Bengio — pioneers in deep learning.

Primary research: deep generative models — including auto-encoders, variational auto-encoders, and GANs

AI Research  
Assistant  
Sep 2013 – Apr 2015

UNIVERSITY OF GUELPH, ENGINEERING –  
GUELPH

AI research assistant under the supervision of Dr. Graham Taylor — director of NextAI, Canada's leading AI startup accelerator, and researcher at Vector Institutes.

Application project: semi-supervised neural network on hyper-spectral images

Primary research: dynamic system based deep learning algorithms, such as theoretical results on gated auto-encoder under the gradient field, and persistent minimum probability learning for Restricted Boltzmann Machines

Secondary research: distance metric learning that optimizes the soft form of Naïve Bayes Nearest Neighbor selection

R&D Specialist  
Nov 2012 – Aug 2013

SIGHTLINE INNOVATION INC. – TORONTO

Designed and implemented the backend component of the VtiS System, a job match scoring system using Apache Hadoop.

Research  
Assistant

Sep 2012 – Nov 2012

UNIVERSITY OF TORONTO, COMPUTER SCIENCE –  
TORONTO

Researched on computational and constructional approaches to the semi-productivity of light verb construction formation. Found meaningful representation of multi-word expression features.

Quantitative  
Analyst (Work  
Study  
Program)

Oct 2010 – Nov 2010

UNIVERSITY OF TORONTO, MATHEMATICS –  
TORONTO

Analyzed combinatorial recursions of very special types, and derived an improved understanding of the complex behavior to find representation of multi-word expression features. Worked with special types of recursion, such as nested recursion, iterative recursion, and meta-Fibonacci recursion.

## Data Analyst

May 2009 – Sep 2009

## AIR CANADA BUSINESS INTELLIGENCE – TORONTO

Designed and built automated reports for airport branches. Utilized business intelligence tools – such as Microsoft Reporting Services, OLAP cube (SSAS), and ETL (SSIS) using SQL server database – to analyze data.

## EDUCATION

PH.D.  
Data Science  
2020 – Present

New York University – New York, US

- Full Scholar
- Data Science Supplementary Fellowship Grant (2020)

M.SC.  
Computer  
Science  
2013 – 2014

UNIVERSITY OF GUELPH – GUELPH, CANADA

- Supervision under Dr. Graham Taylor
- Research included: deep learning, unsupervised learning, statistical machine learning
- P.H. Southwell Research Travel Grant Scholarship (2014)
- Dean's Scholarship (2013, 2014)
- GPA: 89/100

B.Sc.  
Computer  
Science  
2008 – 2012

UNIVERSITY OF TORONTO - TORONTO, CANADA

- Graduated with Distinction, Honors B.Sc.
- Specialization: Computer Science Artificial Intelligence
- Specialization: Mathematics and Its Application
- 3<sup>rd</sup> and 4<sup>th</sup> year GPA: 3.8

CERTIFICATE  
2012

## COURSERA

- Neural Networks for Machine Learning at University of Toronto from Geoffrey .E. Hinton
- Machine Learning at Stanford University from Andrew Ng

CERTIFICATE  
2009

## PRO

- Designing and Developing Windows-based Applications by using the Microsoft .NET Framework

## INVITED TALKS

### **Janelia Symposium**

Imitation learning to understand behaviour

2020

### **University of Guelph**

Fly Behaviour Modeling

2019

### **Toronto Blockchain Week I Crypto Market Analysis & Insights**

Crypto Market Analysis, Crypto Analysis Tools & Data

2019

### **BlockShow Americas**

AI Revolution: the Prediction Machine for the Crypto Market.

2018

### **BorealisAI**

Exploring Deep Neural Network Loss Surface

2017

### **OpenAI, ElementAI, BorealisAI, York University**

AI-Founded Search Engine & AI

2017

### **Janelia Workshop on Machine Learning and Computer Vision**

Semi-Supervised Deep Recurrent Attention Writer

2016

### **European Conference of Machine Learning**

An Empirical Investigation of Minimum Probability Flow Learning under Different Connection

2015

### **European Conference of Machine Learning**

Scoring and Classifying with Gated Auto-encoders

2015

## PUBLICATIONS

### **Evaluation Metrics for Behaviour Modelling**

Daniel Jiwoong Im, Ijung Kwak, Kristin Branson  
[arxiv.org/abs/2007.12298](https://arxiv.org/abs/2007.12298)

2020

### **Model-Agnostic Meta-Learning using Runge-Kutta Methods**

Daniel Jiwoong Im, Yibo Jiang, Nakul Verma  
[arxiv.org/abs/1910.07368](https://arxiv.org/abs/1910.07368)

2019

### **Importance Weighted Adversarial Variational Autoencoders for Spike Inference from Calcium Imaging Data**

Daniel Jiwoong Im, Sridhama Prakhya, Jinyao Yan, Srinivas Turaga, Kristin Branson  
[arxiv.org/abs/1906.03214](https://arxiv.org/abs/1906.03214)

2019

<b>Are skip connections necessary for biologically plausible learning rules?</b>	
Daniel Jiwoong Im, Rutuja Patil, Kristin Branson Neural Information Processing Systems Neural AI Workshop	2019
<b>Stochastic Neighbor Embedding under f-divergences</b>	
Daniel Jiwoong Im, Nakul Verma, Kristin Branson arxiv.org/abs/1811.01247 2018	2018
<b>Quantitatively Evaluating GANS with divergences proposed for training</b>	
Daniel Jiwoong Im, Allan He Ma, Graham Taylor, Kristin Branson International Conference on Learning Representations (ICLR)	2018
<b>Neural Machine Translation with Gumbel-Greedy Decoding</b>	
Jiatao Gu, Daniel Jiwoong Im, Victor O. K. Li AAAI-18: Thirtieth AAAI Conference on Artificial Intelligence (AAAI)	2018
<b>An empirical analysis of the optimization of deep network loss surfaces</b>	
Daniel Jiwoong Im, Michael Tao, Kristin Branson arxiv.org/abs/1612.04010	2017
<b>Denosing Criterion for Variational Auto-encoding Framework</b>	
Daniel Jiwoong Im, Sungjin Ahn, Roland Memisevic, Yoshua Bengio AAAI-18: Thirtieth AAAI Conference on Artificial Intelligence (AAAI)	2017
<b>Generative Adversarial Parallelization</b>	
Daniel Jiwoong Im, Allan He Ma, Dongjoo Kim, Graham Taylor arxiv.org/abs/1612.04021	2016
<b>Learning a metric for Class-Conditioned KNN</b>	
Daniel Jiwoong Im, Graham Taylor International Joint Conference on Neural Networks (IJCNN)	2016
<b>Conservativeness of untied auto-encoders</b>	
Daniel Jiwoong Im, and Mohamed I. D Belghazi, Roland Memisevic AAAI-16: Thirtieth AAAI Conference on Artificial Intelligence (AAAI)	2016
<b>Generating Images with Recurrent Adversarial Networks</b>	
Daniel Jiwoong Im, Chris Dongjoo Kim, Hui Jiang, Roland Memisevic arxiv.org/abs/1602.05110	2016
<b>Scoring and Classifying with Gated Auto-encoders</b>	
Daniel Jiwoong Im, and Graham W. Taylor European Conference of Machine Learning (ECMLPKDD)	2015
<b>An Empirical Investigation of Minimum Probability Flow Learning under Different Connection</b>	
Daniel Jiwoong Im, Ethan Buchman, and Graham W. Taylor European Conference of Machine Learning (ECMLPKDD)	2015
<b>Semi-Supervised Hyperspectral Image Classification via Neighbourhood Graph Learning</b>	
Daniel Jiwoong Im, and Graham W. Taylor In IEEE Geoscience and Remote Sensing Letters	2015

## **Neural Network Regularization via Robust Weight Factorization**

Jan Rudy, Weiguan Ding, Daniel Jiwoong Im, and Graham W. Taylor  
[arxiv.org/abs/1412.6630v2](https://arxiv.org/abs/1412.6630v2)

2015

## **How Is Math Applied in Finance**

Jiwoong Im  
Notes from the Margin Volume VI 2013, Press: Canadian Mathematical Society (p. 4-5, Print)

2013

## PEER REVIEWS

- IEEE Transactions on Neural Networks and Learning System 2020
- Neural Information Processing Systems Workshop 2019
- Neural Computation 2018
- IEEE Transactions on Neural Networks and Learning System 2018
- IEEE Transactions on Neural Networks and Learning System 2017
- Neural Information Processing Systems 2016
- IEEE Geoscience and Remote Sensing Letters 2016
- IEEE Transactions on Knowledge and Data Engineering 2015