




# Jae Hoon (Antonio) Kim

Bachelor of Computer Science, Artificial Intelligence Specialization  
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## TECHNICAL SKILLS

**Languages:** Python, C++, C, SQL, Java, R, JavaScript, Bash

**Tools Used:** PyTorch, TensorFlow, Jax, DeepMind's Haiku, Spark, Redshift, Pandas, Scikit-learn, Numba, Dask, H2O, Node.JS

## WORK EXPERIENCE

**Machine Learning Framework Engineer – Cerebras Systems** | September 2020 – December 2020

- Spearheaded end-to-end integration of the **Jax** library into the **wafer-scale engine's** stack and workflows
  - Supported the **applied machine learning** team's efforts in their **mixed mode auto-differentiation** project.
- Reworked integral aspects of the **PyTorch** and **TensorFlow** library integrations that increased flexibility and versatility.



**Machine Learning Engineer – Yelp, Inc.** | January 2020 – April 2020

- Designed and productionized a revenue optimizing **uplift model** that helps Yelp better serve its (business owner) customers and better target potential advertisers.
- Compiled **uplift modeling** knowledge and tooling into a powerful, versatile internal modeling library.



**Data Scientist – Kik Interactive** | May 2019 – August 2019

- Oversaw company's antispam data science effort and made significant improvements on entire data science stack.
  - Built new, highly effective **XGBoost antispam models** that drove spam numbers down ~10%.
- Optimized dozens of model pipelines with high performing **SQL** queries and distributed **Spark** workflows.



**Statistical Data Scientist – Capital One** | September 2018 – December 2018

- Leveraged **Spark's** powerful **multiprocessing** capabilities to optimize internal model scoring pipelines and tools.
- Built a highly scalable **feature engineering** pipeline using **Spark** to engineer thousands of features for large datasets.



**Developer – The Co-operators (Innovations Lab)** | January 2018 – April 2018

- Eliminated 750 hours yearly of repetitive human labour using robot process automation solutions (**RPA**).
  - Increased efficiency of new and existing workflows tenfold by incorporating efficient **SQL** queries.



**Enterprise Software Developer – Canadian Blood Services** | May 2017 – August 2017

- Added a location and patient blood querying system to the existing **Java EE** and **Grails** web systems.



## RELEVANT PROJECTS

**DeepHubble – Deep Space Image Generation**

- Designed a model that is capable of generating high quality images of deep space akin to the Hubble eXtreme Deep Field
  - Generative Adversarial Network** architecture inspired by **Nvidia's Pro-GAN**



**WATonomous – Autonomous Driving Student Design Team - Perception Team Technical Lead**

- Currently leading the team's **roadline detection** and **object detection** efforts.
  - Engineering state of the art **real-time semantic segmentation** models, balancing accuracy and speed.
  - Developing reliable and accurate **object detection** models to detect pedestrians, cyclists, traffic lights, etc.



**C++ Machine Learning Library (CML)**

- A fully templated, fast and easy to use **deep learning library** specifically designed for use in **C++**
  - Features **dynamic graphs** and fast **auto-differentiation** capabilities that make building and training models a breeze

**There's Waldo!**

- Designed a lightweight **YOLOv3-like single-shot object detection** model able to find Waldo in *Where's Waldo* maps.



**Ultimate Tic Tac Toe Zero**

- Designed a **Deep-Q Reinforcement Learning** Model using **PyTorch** that can play the game Ultimate Tic Tac Toe

**CalcPlusPlus**

- Created a very fast and versatile math engine using **C++** that parses mathematical input and produces the evaluation.



## EDUCATION

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## OTHER EXPERIENCE

- Won the **Hack the Valley Machine Learning Challenge (2018)**
- Won best use of **Interac e-Transfer API** at **UofT Hacks V (2018)**

## ADDITIONAL QUALIFICATIONS

- Language, Korean – Working Knowledge

## INTERESTS

- Artificial Intelligence, Deep Learning, Computer Vision