Jae Hoon (Antonio) Kim

Bachelor of Computer Science
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TECHNICAL SKILLS

Languages: Python, C++, C, SQL, Java, R, JavaScript, HTML, CSS, Bash

Tools Used: PyTorch, TensorFlow, Spark, Redshift, H2O, Pandas, Dask, Scikit-learn, Node.JS, Java EE, Grails

WORK EXPERIENCE

Data Scientist · Kik Interactive · Spring 2019

- Spearheaded company's antispam data science effort and made significant improvements on entire data science stack
  - Built new, highly effective **gradient boosted models** that drove spam numbers down immensely.
- Optimized many model pipelines with high performing **SQL** queries and distributed **Spark** workflows
- Performed countless analyses to provide company with insight on the overarching spam environment

Statistical Data Scientist · Capital One · Fall 2018

- Improved runtime of internal model scoring pipelines and tools by leveraging **Spark**'s powerful multithreading capabilities.
- Built a highly scalable feature engineering pipeline using **Spark** to engineer thousands of features for large datasets which were used to train **H2O GBM** risk models which added thousands of dollars in business value.
- Provided company with optimal use case analyses and performance benchmarks for **Pandas**, **Dask**, and **Spark.**

Developer · The Co-operators – Innovations Lab · Winter 2018

- Eliminated 750 hours yearly of repetitive human labour by implementing software robot process automation solutions (**RPA**).
  - Significantly increased efficiency of new and existing workflows by incorporating efficient **SQL** scripts.

Enterprise Software Developer · Canadian Blood Services · Summer 2017

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

RELEVANT PROJECTS

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

- Currently leading the team's roadline detection and object detection efforts.
  - Engineering the perfect balance between speed and accuracy using state of the art **real-time semantic segmentation**
  - Developing reliable and accurate object detection models to detect pedestrians, cyclists, traffic lights, etc.
- Building robust perception modules that can seamlessly integrate with the entire WATonomous software stack.

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 **automatic gradient** calculations that make training models a breeze
  - Includes a comprehensive tensor class as well as convolutions and fully connected layers.

Ultimate Tic Tac Toe Zero

- Designed a **Deep-Q Reinforcement Learning** Model that can play the game Ultimate Tic Tac Toe
  - Surpasses human-level play and outperforms traditional Monte Carlo Tree Search methods.
  - Utilized **PyTorch** library to build and train the dynamic neural networks used to approximate the Q-function.

Math Evaluation Library

- Created a **Java** library which comprises of an algorithm that parses mathematical input and produces the evaluation.
- Developed a Calculator application that wraps my math evaluation algorithm in a **Java** Swing GUI.

EDUCATION

Bachelor of Computer Science, Artificial Intelligence Option · University of Waterloo, Ontario

OTHER EXPERIENCE

- **Won** the Hack the Valley Machine Learning Challenge (2018)
- **Won** best use of Interac e-Transfer API at UofT Hacks V (2018)
- **Won** 3rd place at Hack 4 Child Mental Health (2018)

ADDITIONAL QUALIFICATIONS

- Language, Korean – Working Knowledge

INTERESTS

- Reading, Music – Piano, Table Tennis, Sci-Fi Movies