Allan H. Ma

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Technical and Personal skills

- **Programming Languages:** Python, C++
  Familiar with: Shell scripting, Javascript, SQL (Postgre and Spark).
- Familiar with popular deep learning tools: Theano, Pytorch, Caffe Tensorflow.
- Familiar with parallel computing across cluster nodes and MPI programming in Linux.
- **Industry Software Skills:** Github, Matlab, LabVIEW, Teradata SQL Assistant, MS Office.
- **General Communication Skills:** Academic presentation skills and LaTeX typesetting.

Working Experience

- **ModiFace, a L'Oréal Group Company** — **Toronto, Ontario**
  AI Research Scientist (Full Time) — *Mar. 2018 - Present*
  - Hair Segmentation: Explore off-the-shelf models, e.g., MobileNet, in Caffe and experimented training on hair segmenation data for realtime mobile application.
  - Skin Diagnosis: Participate in training models for scoring skins of different signs and ethnicities.
  - Makeup Preview Generation: Generate realistic makeup preview, e.g., lipstick, with unsupervisely learned image-to-image translator based on conditional GANs in Pytorch.
- **Marketing Science, RBC Royal Bank** — **Toronto, Ontario**
  Data Analyst Internship (Full Time) — *Sep. 2017 - Feb. 2018*
  - Client Feature Universe: Build client feature universe in Spark SQL on a Hadoop platform for improved offer proposition and campaign strategy design.
  - SAS code and Tech Spec parser: Build a SAS code and word document interpreter for automated and accurate information-of-interest extraction.
  - Offer Automation: Build an offer creation and update system with a form front-end and data set back-end with transform and validation rules written in pyspark.
- **Machine Learning Research Group, University of Guelph** — **Guelph, Ontario**
  GPU Software Researcher (Full Time) — *Feb. 2016 - Aug. 2017*
  - Deep Learning Research: Participate in image classification and generation research. Develop a large scale multi-node multi-GPU deep learning framework on copper
  - Hardware Benchmark: Test parallelism for accelerated deep learning, evaluate communication bandwidth and GPU performance on Intel-based cluster and IBM Power Systems.
  - Software Maintain: Build Linux software and python stack from source or via Anaconda. Build popular deep learning software for research group, including Theano, TensorFlow, Caffe, Torch, OpenCV and DIGITS on Ubuntu and CentOS with x86_64, ppc64le and arm64 architectures.

Research and Projects

- **GAN evaluation:**
  Daniel Jiwoong Im, He Ma, Graham Taylor, Kristin Branson. *Quantitatively Evaluating GANs With Divergences Proposed for Training.* ICLR 2018.

Experimented with evaluating generated sample qualities based on some divergence metrics across different hyper parameter dimensions.

- **Generative adversarial parallelization:**
  Daniel Jiwoong Im, He Ma, Chris Dongjoo Kim, Graham Taylor. *Generative Adversarial Parallelization.* arXiv:1612.04021 (2016).

  Experimented with parallelized training of multiple Generative Adversarial Networks for improved mode coverage and regularization.

- **Multi-node Multi-GPU training:**
  He Ma, Fei Mao, Graham W. Taylor. *Theano-MPI: a Theano based distributed training framework.* ECPP. Springer, Cham, 2016.

  Implemented distributed deep learning on ImageNet classification aiming to scale up the training of deep learning models based on data parallelism. It utilizes multiple GPUs on a computing cluster to speed up the training performance.

- **Software design for oxygen monitoring application:**

  Built an oxygen monitoring system which runs on a prototype board (FPGA and MCU) for collecting oxygen absorption signal and calculating real time concentration. The prototype includes LCD display and other human interfaces for signal display, menu control and data recording purposes.

Education

Academic Qualifications

- **University of Guelph** — **Guelph, Canada**
  Master of Engineering , Avg: 92.7% — *Jan. 2014 – Feb. 2016*
  Major: Engineering Systems and Computing
  Advisor: Dr. Graham Taylor

- **Tianjin University** — **Tianjin, China**
  Bachelor of Engineering, Avg: 85.2% — *Sep. 2009 – Jul. 2013*
  Major: Measuring and Control Technology and Instrument

Summer Schools

- **University of Montreal** — **Montreal, Canada**
  Deep Learning, Reinforcement Learning Summer School — *Aug. 2017*

- **NextAI** — **Toronto, Canada**
  Deep Natural Language Processing course by Kyunghyun Cho — *Jul. 2017*

Awards

- **Lana McLaren/Richard Reynolds Memorial Scholarship** — **University of Guelph**, *Oct. 2014*
- **Outstanding graduation design** — **Tianjin University**
  ranking 4 /120 — *Jun. 2013*
- **3rd Prize of Innovation Contest** — **iCAN-China 2011, Tianjin Area**
  Title: Wireless Music Shoes — *Aug. 2011*
- **3rd Prize of Flash Video Contest** — **SPIOEE, Tianjin University**
  Title: Principle of Mathematical Convolution — *May 2011*