YILIN (LARRY) LI

(416)-834-8954 ◇ y2432li@uwaterloo.ca ◇ larryli1999.github.io

EDUCATION

University of Waterloo Sep 2017 - Present
B.A.Sc. in Mechatronics Engineering with Artificial Intelligence Option *Waterloo, ON*
Cumulative GPA: 90.86/100, Dean's Honours List

PUBLICATIONS

- *Squeezing Water from a Stone: A Bag of Tricks for Further Improving Cross-encoder Effectiveness for Reranking*
  Pradeep, R., Liu, Y., Zhang, X., **Li, Y.**, Yates, A., Lin, J.
  Proceedings of ECIR 2022
- *New Nails for Old Hammers: Anserini and Pyserini at TREC 2021*
  Lin, J., Chen, H., Hu, C., Lin, S., **Li, Y.**, Ma, X., Pradeep, R., Yang, J., Zhang, X.
  Proceedings of TREC 2021
- *Automatic Classification of Pathology Reports using TF-IDF Features*
  Kalra, S., **Li, L.**, Tizhoosh, H.R.
  Arxiv preprint 1903.07406

RESEARCH EXPERIENCES

University of Waterloo May 2021 - Presen
Undergraduate Research Assistant *Waterloo, ON*
- Supervised by Prof. Jimmy Lin, researching information retrieval and natural language processing
- Developed multi-staged information retrieval systems with BM25 and T5 model for 2021 TREC Clinical Trials Track and Heath Misinformation Track
- Experimented Transformer-based models on MS MARCO ranking tasks with Localized Contrastive Estimation loss

University of Waterloo (Kimia Lab) Sep - Dec 2018
Undergraduate Research Assistant *Waterloo, ON*
- Supervised by Prof. Hamid Tizhoosh, researching medical image search and keyword extraction
- Applied keyword extraction with TF-IDF and LDA from Scikit-learn from 1,949 pathology reports
- Generated over 5,000 patches from 300 pathology images using Openslide Library for DenseNet feature extraction

WORK EXPERIENCES

Huawei Canada Sep - Dec 2020
Machine Learning Engineer Intern *Montreal, QC*
- Applied 8-bit QAT on BERT and fine-tune the fully quantized model on the GLUE benchmark
- Implemented knowledge distillation to stabilize quantization while replacing BERT LayerNorm with NoNorm
- Experimented structured pruning on BERT FFN during model's pre-training and fine-tuning phases

Synapse Technology Jan - Apr 2020
Deep Learning Engineering Intern *Palo Alto, CA*
- Developed a 3D detector with SSD and used the slice-and-fuse architecture to detect handguns from CT scans
- Trained and evaluated a system of SSDs to detect explosives and assembled IEDs from X-ray images
- Implemented automated consensus process on 1.5M labelled data to improve data processing efficiency

Primate Labs May - Aug 2019
Machine Learning Developer Intern *Toronto, ON*
- Developed an Android application which implemented image classification, object detection, semantic segmentation, face recognition, style transfer, pose estimation and sentiment analysis using TensorFlow Lite

EXTRA-CURRICULUM

University of Waterloo Self-driving Car Team (WATonomous)
Perception Team Core Member
- Improved inferencing performance of TensorFlow neural networks by CPU and FPGA optimizations
- Developed a C++ algorithm for ROS nodes which ran the networks and transferred predictions from the networks to the rest of the software pipeline