KEYI YU

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EDUCATION

Carnegie Mellon University, School of Computer Science Pittsburgh, PA
Master of Computational Data Science | GPA: 3.86 Dec. 2019 (expected)
Related courses: Cloud Computing, Machine Learning(PhD level), Introduction to Computer System, Deep Learning, Neural Network for NLP, Machine Learning for Text Mining

Tsinghua University, School of Software Beijing, China
Bachelor of Engineering in Software Engineering | GPA: 90 (Rank: 4/66) Jul. 2018
Honors: Candidate of 54th IMO Chinese National Team (62 people in China)

WORK EXPERIENCE

Linkedin, Flagship Search Group Sunnyvale, CA
Machine Learning Engineer Intern *May.2019 - August.2019*

· Extracted a name pair dataset(140K pairs) from raw user query log with Hadoop Pig and crowdsourcing.
· Trained a name embedding using Siamese LSTM & Transformer, achieved 0.99+ NDCG, 0.94+ AP evaluated with similarity ranking. Boost performance by using triple loss and pre-trained name language model.
· Built a hash-based name variant retrieval system. Improved F1-score from 0.38 (rule based model) to 0.66.
· Trained a translation model, which directly generate input names' variants with beam search.

Microsoft Research Asia, Machine Translation Group Beijing, China
NLP Research Intern, Mentor: Dr. Tao Qin *Sep.2017 - Mar.2018*

· Improved Tensor2Tensor baseline by implementing self-paced learning.
· Reimplemented and test performance of various structured prediction losses on NMT task.
· Trained a Learning-to-Teach model with reinforcement learning, realized dynamic loss selection for each training batch. Achieved a higher BLEU score on IWSLT 2014 than any single loss benchmark.

PROJECTS

Attention Based End-To-End Speech-To-Text Translator Apr.2019 - May.2019

· Implemented a encoder-decoder model with attention mechanism, boosting with techniques like pooling BiLSTM, Teacher forcing rate scheduler, Beam search.
· Achieved 7.5 Levenshtein distance on Wall Street Journal dataset, ranked 1st among 166 people.

Medical Image Segmentation with Self-Supervised Learning Feb.2019 - May.2019

· Implemented 2D&3D UNet, achieved reported dice score on HVSMR 2016 and Cardiac Atlas Dataset.
· Tuned a registration model for 3D deformed heart slices. Trained a feature map embedding by doing distance learning between corresponding patches to improve segmentation results.

High Performance Web Service for Data Retrieval Oct.2018 - Dec.2018

· Implemented Extract, Transform and Load(ETL) on more than 1TB Twitter data.
· Orchestrated Undertow frontend and MySQL backend server using AWS(Terraform,S3,RDS,LightSail)
· Develop data analysis APIs supported by user intimacy ranking and document similarity retrieval system.
· Optimized the whole system with Connection Pool(DBCP) / MultiIndex / Elastic Load Balancer(ELB) / Pre-computation. Improved throughput from 500+ to 8000+ RPS.

Fast and Accurate Text Classification with Reinforcement Learning Jun.2017 - Oct.2017

· Speed up text-classification's inference process, maintaining the same accuracy.
· Trained a model by jointly optimizing policy module and neural classifier. Realized dynamic selection of whether stop reading or which semantic unit to read given current context.
· Attained 2x-4x speedup on various scales' datasets, summarized results into an ICLR paper.

PUBLICATION

K. Yu, Y. Liu, A. Schwing, J. Peng, "Fast and accurate text classification: skimming, rereading and early stopping", Accepted by workshop of International Conference on Learning Representations, 2018

SKILLS

Languages	C/C++, Python, Java, HTML/CSS/Javascript, Scala, Haskell, SQL
Frameworks	Pytorch, Keras, TensorFlow, Theano, OpenCV, Hadoop, Spark, Undertow, Django
Tools	AWS, GCP, Azure, Qt, Linux, LaTex, MATLAB, Git, Vim