MOYAN MEI

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Fashion District, Toronto, Ontario, Canada

EDUCATION

Simon Fraser University *2014.9 - 2016.8*
Master of Science in Statistics Burnaby, Canada

- Graduate Fellowship, GPA: 3.76/4.0

Dalhousie University *2011.5 - 2014.5*
Bachelor of Science in Statistics (Honors) Halifax, Canada

- **Highest** GPA: 3.92/4.0 among (25+) major courses
- First Class Honors, cGPA: 3.82/4.0
- President's Entrance Scholarship, cGPA: 92/100

CORE QUALIFICATIONS

Language & Tool	Python, R, SQL, Spark, Bash, Matlab, MongoDB, LaTeX Google Cloud Service, AWS S2/EC2, Docker
Deep Learning Framework	Pytorch, Keras, Tensorflow, PaddlePaddle, Theano, Mxnet
NLP Library	HuggingFace Transformers, FairSeq, AllenNLP, Stanza, Spacy
In-depth Knowledge	Deep Neural Networks, Machine Learning, Data Mining Statistical Inference, Error Analysis, Probability, Linear Algebra

EXPERIENCE

Course5 AI Lab *2019.11 - Present*
Principal Scientist Toronto, Canada

- Architect AI solutions for core NLP products currently serving Lenovo, PepsiCo, Colgate & Palmolive, and Microsoft, among others
- Lead the creation of Persia, a scalable conversational Q&A system built on top of Adapter Transformers that interprets natural language into query language, performs data mining, prediction, and knowledge graph reasoning, currently supporting multi-modal and multi-lingual
- Research and design efficient neural information retrieval algorithms to advance search and knowledge-based Q&A tasks with a performance of MRR@5=0.88 and a 5x less memory footprint. Specifically, there are bi-encoders that leverage contrastive learning and self-distillation, as well as sequence-to-sequence Transformers based on Trie's decoding
- Propose two knowledge distillation frameworks for natural language understanding, SEAD and ESEAD, which improve inference speed by 3-15 times and reduce model size to 5-40% of the teacher models, while retaining 97% or even exceeding the performance of the teacher models

WGames Inc *2018.1 - 2019.10*
Machine Learning Scientist Toronto, Canada

- Provided daily game recommendations to half-million users through a multi-task learning approach Multi-Gate Mixture-of-Experts (MMoE)
- Applied collective matrix factorization for cold-start (new users) recommendation, and it increased 30% user retention in the first week
- Improved user experience by conducting a series of text mining tasks, i.e., aspect-based sentiment analysis, topic classification, and smart-reply models with Spacy-Transformer
- The above makes the company product one of the **top 3 most popular games** in the same category on Google Play

Leafy AI *2017.12 - 2019.7*
NLP Scientist Beijing, China

- Developed a Chinese NLP toolkit based on LSTM and attention mechanism for customer's daily efficiency, such as word segmentation, named entity recognition, event extraction, etc.
- Improve in-app search experience with Doc2Vec trained sentence embedding and fast indexing methods such as Faiss and Annoy
- Built a closed domain Q&A system for customers to facilitate access internal information
- Implement knowledge distillation and quantification for deep learning models to obtain low memory and mobile friendly offline models in ONNX format

Istuary Innovation Group *2016.9 - 2017.10*
Data Scientist Vancouver, Canada

- Designed 1:1 facial verification, 1:N facial recognition and facial alignment deep learning prototypes embedded in smart cameras
- Proposed a two-stage facial verification method, which improves the state-of-the-art model by 6-30% in various scenarios
- Maintained a fast, high-quality, and large-scale image data pre-processing framework, including image cropping, resizing, clustering, and augmentation
- Established an automatic summarization API for the Chinese news App by adapting KL divergence, TextRank, and Recurrent Neural Networks

COMPETITION

Statistical Society of Canada Conference Competition *2014.1 - 2014.5*
Uken Company Toronto, Canada

- Applied exploratory analysis with visualization on 300K users to obtain interpretable features about revenue among predictors, e.g., gender, platform, and in-game items, etc.
- Built an ensemble high accuracy $\approx 94\%$ classification model from logistic regression, linear discriminant analysis, and support vector machine for the retention of the game users
- Constructed additive regression models, e.g., generalize additive model and multiple linear regression to predict overall revenues with accuracy $\approx 87.5\%$
- **3rd place** winner of the case study competition

ACHIEVEMENTS

Graduate Fellowship from Simon Fraser University *2016.1*
Third place winner of SSC Conference Competition *2014.5*
Six times Dean's List at Dalhousie University *2011.5 - 2014.5*