Haowen Xu

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EDUCATION

Georgia Institution of Technology 08/2019 - present

MS in Computational Science and Engineering, GPA: 4.0/4.0

- Teaching Assistant - CSE 6740 Computational Data Analysis.

Tsinghua University 09/2013 - 07/2017

B.Eng in Biomedical Engineering, GPA: 90.3/100, Ranking: 2/29

- Tsinghua Outstanding Undergraduate in 2017. (60 out of 3000+ students at Tsinghua)
- Scholarship for outstanding academic performance in 2015/2016. (Top 5% at Tsinghua)
- Silver Trophy in Tsinghua Students Summer Practice in 2014 (Top 20 at Tsinghua)
- Ranked Top 0.1% among 240,000 students in the National College Entrance Exam.

Washington University in St. Louis 08/2015 - 12/2015

Exchange Program, GPA: 4.0/4.0

- Sponsored by China Scholarship Council

PAPER

1. Xinshi Chen, Yan Zhu, **Haowen Xu**, Muhan Zhang, Liang Xiong, Le Song. *Learning Two-Time-Scale Representations For Large Scale Recommendations.* Under Review.
2. **Haowen Xu**, Hao Zhang, Zhiting Hu, Xiaodan Liang, Ruslan Salakhutdinov, Eric Xing. *AutoLoss: Learning Discrete Schedule for Alternate Optimization.* ICLR 2019.

WORK EXPERIENCE

Deeplycurious.ai, Beijing 09/2017-02/2018

Algorithm Engineer in Natural Language Processing (NLP) team

- Designed an attention based sequence labeling model, which achieves state-of-the-art results on NER task on benchmart dataset, reducing the inference time of company's online service product by 90%.
- Proposed a deep architecture with paragraph reasoning modules for document classification, which takes advantage of both symbolic reasoning and deep nerual nets.

RESEARCH PROJECT

Protein sequence alignment via deep learning and reasoning 02/2020 - present

Georgia Tech Advisor: **Prof. Le Song**

- Designed a deep architecture for protein sequence alignment problem to incorporate prior knowledge via a differentiable reasoning layer, which achieves state-of-the-art performance on benchmark dataset.
- The model is highly structured and performs well in case of small data, which is an important property for solving biological problems.

Learning two-time-scale user model for recommendation system 02/2020 - present

Georgia Tech (joint project with Facebook AI, Personalization Team) Advisor: **Prof. Le Song**

- By modeling active and inactive users in different ways, the overall hybrid user model is simple yet effective, achieving at least 7% improvement on two largest benchmark datasets.
- This hybrid model tackles the challenges of both *long-range* sequence modeling for active users, and the *cold-start* problem for inactive or new users jointly.

Meta Learning: learning of dynamic learning schedule 03/2018 - 07/2018

Carnegie Mellon University Advisor: **Prof. Eric Xing**

- Proposed a meta-learning framework, which provides a generic way to learn the discrete optimization schedule from metadata, allowing for a dynamic learning schedule in ML problems. ICLR 2019

Auditory signal segmentation and classification via deep learning 08/2016 - 05/2017

Johns Hopkins University Advisor: **Prof. Xiaoqin Wang**

- Designed a deep architecture for marmoset vocalization segmentation and classification working under high signal-to-noise ratio condition, which improves the detection F1-score by 50%.
- The earliest work to apply deep learning to animal vocalization detection.

Single photon simulation of Intrinsic Imaging system 08/2016 - 05/2017

Johns Hopkins University Advisor: **Prof. Xiaoqin Wang**

- Built a single photon simulation model in C++ and conducted simulation experiments to model the propagation of polarized photon in brain tissue.
- Experimental results showed that polarized photon can improve imaging depth, which guided the building of an intrinsic imaging system.