

KELONG MAO

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EDUCATION

Renmin University of China & Université de Montréal 09/2021 – 06/2025 (expected)

Joint Ph.D. Program. Artificial Intelligence in RUC and Computer Science in UdeM

Tsinghua University 09/2018 – 06/2021

M.Eng. in Computer Technology

Nankai University 09/2014 – 06/2018

B.Eng. in Computer Science and Technology

EXPERIENCE

Bytedance, Tiktok Search Group Machine Learning Engineer Intern, 01/2021 – 05/2021

- Developed “search after watch” and “re-search” features for personalized micro-video CTR prediction based on self-attention for Tiktok.

Huawei Noah's Ark Lab Research Intern, 12/2019 – 07/2020

- Proposed *UltraGCN*, an efficient GNN-based recommendation model that directly mimics the effect of infinite-layer message passing to learn various user-item relationships more flexibly. Published in CIKM'21.
- Proposed a Cosine Contrastive Loss and a strong baseline *SimpleX* which achieved SOTA performance with extremely simple architecture. Published in CIKM'21.
- Proposed *TagGNN*, a heterogeneous graph neural network for more accurate item tagging under IR scenarios, which has been deployed in the real item tagging system in the company. in Published in SIGIR'20.

Tencent AI Lab Research Intern, 07/2019 – 12/2019

- Designed a *Graph-enhanced Transformer* framework to leverage the graph and sequence information of the molecule for retrosynthesis prediction. Published in Neurocomputing'21.

PUBLICATIONS

* indicates equal contributions.

- Kelong Mao**, Zhicheng Dou, Hongjin Qian, Fengran Mo, Xiaohua Cheng, Zhao Cao “ConvTrans: Transforming Web Search Sessions for Conversational Dense Retrieval,” in **EMNLP'22 (Full paper)**,
- Kelong Mao**, Zhicheng Dou, Hongjin Qian, “Curriculum Contrastive Context Denoising for Few-shot Conversational Dense Retrieval,” in **SIGIR'22 (Full paper)**, [Github] [PDF]
- Kelong Mao** Jieming Zhu, Xi Xiao, Biao Lu, Zhaowei Wang, Xiuqiang He, “UltraGCN: Ultra Simplification of Graph Convolutional Networks for Recommendation,” in **CIKM'21 (Full paper)**, [Github] [PDF]
- Kelong Mao***, Jieming Zhu*, Jinpeng Wang, Quanyu Dai, Zhenhua Dong, Xi Xiao, Xiuqiang He, “SimpleX: A Simple and Strong Baseline for Collaborative Filtering,” in **CIKM'21 (Full paper)**, [Github] [PDF]
- Kelong Mao**, Xi Xiao, Guangwu Hu, Xiapu Luo, Bin Zhang, Shutao Xia, “Byte-Label Joint Attention Learning for Network Traffic Classification,” in **IWQoS'21 (Full paper)**, [PDF]
- Kelong Mao**, Xi Xiao, Tingyang Xu, Yu Rong, Junzhou Huang, Peilin Zhao, “Molecular Graph Enhanced Transformer for Retrosynthesis Prediction,” in **Neurocomputing'21 (Full paper)**, [Github] [PDF]
- Kelong Mao**, Xi Xiao, Jieming Zhu, Biao Lu, Ruiming Tang, Xiuqiang He, “Item Tagging for Information Retrieval: A Tripartite Graph Neural Network based Approach,” in **SIGIR'20 (Long paper, Industry track)**, [PDF]

SKILLS

Professional Knowledge: Information Retrieval and Recommendation Algorithms, NLP, ML/DL

Programming Languages: Python, C/C++, Java

Tools and Frameworks: PyTorch, Git, L^AT_EX

AWARDS

- National Scholarship for Doctoral Students. (Top 5% PhD students) China, 2022.
- ACM SIGIR 2022 Student Travel Grant.
- Tsinghua SIGS Comprehensive Excellent First-class Scholarship (Top 10 % students).
- Tsinghua SIGS Professional Practice Third-class Scholarship.

¹This curriculum vitae was last updated at 06/10/2022.