

# KELONG MAO

<sup>1</sup> kyriemkl@gmail.com • Homepage

## EDUCATION

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

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

**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 and Tools** Python, C/C++, Java. PyTorch, Git, L<sup>A</sup>T<sub>E</sub>X

## 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.

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