

Wentao Ning

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Research Interests: Recommender System

EDUCATION

The University of Hong Kong (HKU)
Ph.D. in Computer Science

Hong Kong SAR
2020 – 2024 (Expected)

Southern University of Science and Technology (SUSTech)
B.Eng. in Computer Science and Technology. GPA: 3.73/4.00

Shenzhen, China
2016 – 2020

INTERNSHIPS

TikTok, ByteDance
Recommendation Algorithm Intern

Shanghai, China
Nov. 2022 – Mar., 2023

- Leverage different recommendation strategies to increase publish rate of TikTok creators.
 - * Publishing preferences: Train a model using daily user-publish-video data to learn which kinds of videos that a user can create. Promote author publishing by recommending them more they-can-create videos. Increase publish/user by 0.5%.
 - * Traffic Incentives: Using uplift models to find users that are insensitive to unpopular (low video views) videos. Recommend more unpopular videos to them to promote author publishing and prevent user losing.
 - * Comment Incentives: Investigate the correlation between #comment authors received and #publication of them. Increase the recommendation of low-comment videos to encourage author publishing.

TCL Corporate Research (HK)
Research Intern

Hong Kong SAR
Jun. – Aug., 2021

- Propose an automatic effective meta-path searching framework for existing meta-path-based recommenders.
- Propose a GNN-based method for recommendation by using meta-paths.

Huawei Technologies
Site Reliability Engineer Intern

Dongguan, China
Jul. – Aug., 2019

- Mainly engage in monitoring system development. Implement an anomaly alert and email notification system.
- Complete 17 instructing documents, 3 demo (database migration tool, monitoring interface customization, key data query and alarm service) and 5 improvement suggestions.

PUBLICATIONS

1. **Wentao Ning**, Reynold Cheng, Jiajun Shen, Nur Al Hasan Haldar, Ben Kao, Xiao Yan, Nan Huo, Tian Li, Wai Kit Lam, Bo Tang. **Automatic Meta-Path Discovery for Effective Graph-Based Recommendation**. In CIKM (CCF-B), 2022.
2. Reynold Cheng, Chenhao Ma, Xiaodong Li, Yixiang Fang, Ye Liu, Victor Y.L. Wong, Esther Lee, Tai Hing Lam, Sai Yin Ho, Man Ping Wang, Weijie Gong, **Wentao Ning**, Ben Kao. **The Social Technology and Research (STAR) Lab in the University of Hong Kong**. ACM SIGMOD Record, 2022.
3. **Wentao Ning**, Xiao Yan, and Bo Tang. **“Towards Efficient MaxBRNN Computation for Streaming Updates.”** In ICDE (CCF-A), 2021.
4. **Wentao Ning**, Qiangdong Tang, Yi Zhao, Chuan Yang, Xiaofeng Wang, Teng Wang, Haotian Liu, Chaozu Zhang, Zhiyuan Zhou, Qiaomu Shen, and Bo Tang. **“CheetahVIS: a visual analytical system for large urban bus data.”** In PVLDB (CCF-A), 2020.

RESEARCH PROJECTS *(I AM THE FIRST AUTHOR OF ALL BELOW PROJECTS)*

- **Leverage Local and Global Popularity for Recommendation** (Jun. 2022 - Feb. 2023; Submitted to SIGIR'23)
 - Analyze the limitations of existing popularity-aware methods that consider item popularity from a global perspective and propose local popularity to tackle these limitations.
 - Propose the LGP framework based on casual graphs to jointly utilize local and global popularity for recommendation, which is general and can adapt to different recommendation models and use cases.
- **Multi-domain Recommendation with Domain Disentangling and Alignment** (Feb. 2022 - Oct. 2022; Submitted to KDD'23)
 - Propose an embedding disentangling architecture for multi-domain recommendation, which explicitly disentangles inter-domain and intra-domain knowledge at the embedding level.
 - Formulate a random walk-based domain alignment strategy to identify similar users/items from different domains, which helps to share knowledge and avoid over-fitting.
- **Automatic Meta-Path Discovery for Effective Graph-Based Recommendation** (Feb. 2021 - Oct. 2021; Accepted by CIKM'22)
 - Propose a general reinforcement learning-based meta-path selection framework RMS, which is the first framework that can be plugged into any meta-path-based recommendation models.
 - Develop a new meta-path-based recommendation method RMS-HRec and design training strategies to fully explore the potential of meta-paths for recommendation tasks.
- **Towards Eicient MaxBRNN Computation for Streaming Updates** (Mar. 2020 - Oct. 2020; Accepted by ICDE'21)
 - Propose a novel problem called streaming MaxBRNN in spatial database area, which finds the optimal region to deploy a new service point when both the service points and client points are under continuous updates.
 - Devise an efficient slot partitioning-based algorithm (SlotP), which divides the space into equal-sized slots and processes each slot independently. SlotP is 2-3 orders of magnitude faster than SoTA baselines.
- **CheetahVIS: A Visual Analytical System for Large Urban Bus Data** (Oct. 2019 - Feb. 2020; Accepted by VLDB'20)
 - Built a visual analytical system CheetahVIS for efficient massive urban bus data analysis, which builds upon Spark and provides a visual analytical platform for the stakeholders (e.g., city planner, data analysts).

SCHOLARSHIPS AND AWARDS

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| • Postgraduate Scholarship | 2020–2024 |
| • Outstanding Graduate in Department of Computer Science and Engineering | 2020 |
| • Outstanding Graduate in Shuli College | 2020 |
| • Outstanding Student Scholarship | 2017–2019 |
| • Outstanding Freshmen Scholarship | 2016 |

TEACHING

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|---|-----------------------------------|
| • Teaching Assistant at The University of Hong Kong
The Age of Big Data (CCST9047) | Spring 2021 |
| • Teaching Assistant at Southern University of Science and Technology
Operating System (CS302)
Object Oriented Analysis and Design (CS309)
Data Structure and Algorithm Analysis (B) (CS203B) | Spring 2020, Fall 2019, Fall 2018 |

SKILLS

- **Programming:** Python, Java, C++, SQL
- **Tools:** Pytorch, Numpy, Jupyter

LANGUAGES

- **Mandarin:** Native, **Cantonese:** Proficient
- **English:** Fluent