# Wentao Ning

Website: stevenn9981.github.io/
Email: wtning@cs.hku.hk
Telephone: (+86) 13979805143 / (+852) 96718094
GitHub: github.com/Stevenn9981

## Education

**The University of Hong Kong** (HKU) — Hong Kong, China
Ph.D. in Computer Science — 2020–2024 (Expected)

- HKU-SUSTech Joint PhD Program. Supervisors: Reynold Cheng (HKU), Bo Tang (SUSTech)
- Research Interests: Recommender System, Graph Neural Networks.

**Southern University of Science and Technology** (SUSTech) — Shenzhen, China
B.Eng. in Computer Science, GPA: 3.73/4.00 — 2016–2020

- Thesis: "Public Transportation Scheduling Evaluation: A Data-Driven Approach"

## Internship

**TCL Corporate Research(HK) Co., Ltd** — Hong Kong, China
Research Intern — Jun. - Aug., 2021

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

**Huawei Technologies Co., Ltd.** — Dongguan, China
Site Reliability Engineer Intern — Jul. - Aug., 2019

- Mainly engaged in monitoring system development. Implemented a load anomaly alert and email notification system.
- Completed 17 instructing documents, 3 demo (database migration tool, monitoring interface customization, key data query and alarm service) and 5 improvement suggestions.

## Research Projects

- **Multi-domain Recommendation with Domain Disentangling and Alignment** (Mar 2022 - Oct 2022)
  - **Submitted to TheWebConf (WWW) 2023 [First author], collaborating with Huawei Noah's Ark Lab.**
  - 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** (Dec 2020 - Oct 2021)
  - **Accepted by CIKM 2022 [First author], collaborating with TCL Research Hong Kong.**
  - 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 Efficient MaxBRNN Computation for Streaming Updates** (Mar 2020 - Sep 2020)
  - **Accepted by ICDE 2021 [First author].**
  - 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. Our experiments show that *SlotP* is 2-3 orders of magnitude faster than state-of-the-art baselines.

- **CheetahVIS: A Visual Analytical System for Large Urban Bus Data.** (Sep 2019 - Jan 2020)
  - **Accepted by VLDB 2020 [First author].**
  - 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 in bus company) to conduct effective and efficient analytical tasks.

## 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 31st ACM International Conference on Information and Knowledge Management (**CIKM**), 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."** 2021 IEEE 37th International Conference on Data Engineering (**ICDE**), 2021.

4. **Wentao Ning**, Qiandong 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."** Proc. VLDB Endow (**PVLDB**), 2020.

## Scholarships and Awards

- Postgraduate Scholarship 2020–2024
- Outstanding Graduate in Department of Computer Science and Engineering 2020
- Outstanding Graduate in Shuli College 2020
- Outstanding UG Teaching Assistant 2019
- Outstanding Students Scholarship 2017–2019
- Outstanding Freshmen Scholarship 2016

## Teaching

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

## Academic Service

- **Reviewer / External Reviewer**
  - **AAAI 2022**: AAAI Conference on Artificial Intelligence
  - **ICDE 2022**: IEEE International Conference on Data Engineering
  - **SIGKDD 2021, 2022**: Conference on Knowledge Discovery and Data Mining
  - **CIKM 2021, 2022**: ACM International Conference on Information and Knowledge Management
  - **TKDE 2020, 2021, 2022**: IEEE Transactions on Knowledge and Data Engineering

## Skills

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

## Languages

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