

# Haolun Wu

Ph.D. student, Computer Science  
McGill University & MILA - Quebec AI Institute  
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## Research Interests

Recommender System · Information Retrieval · Fairness in ML · Causal Reasoning

## Academic Studies & Diplomas

- 2021-present **Ph.D. Computer Science**, McGill University & MILA, Montreal, Canada.  
Advisor: [Xue \(Steve\) Liu](#). (William Dawson Professor, FCAE, FIEEE, ACM SIGBED Chair).  
Thesis Committee: [Fernando Diaz](#), [Mark Coates](#), [Benjamin Fung](#).
- 2019-2021 **M.Sc. Computer Science**, McGill University & MILA, Montreal, Canada.  
Advisor: Xue (Steve) Liu.  
Thesis title: Balancing Fairness in Multi-stakeholder Recommendation via Multi-Objective Optimization
- 2018-2018 **International Exchange**, University of California, San Diego (UCSD), San Diego, USA.
- 2015-2019 **B.E. Computer Science and Engineering**, Northeastern University (NEU), Shenyang, China.  
Excellent Graduation Thesis. Outstanding Graduate. Outstanding Student for all years.

## Publications

### Conference Proceedings

- SIGIR 2022 Haolun Wu, Bhaskar Mitra, Chen Ma, Fernando Diaz, and Xue Liu. “**Joint Multisided Exposure Fairness for Recommendation**”. In the 45rd International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR 2022, acceptance rate: 161/794 = 20%), Madrid, Spain, Jul. 2022.
- AAAI 2021 Chen Ma, Liheng Ma, Yingxue Zhang, Haolun Wu, Xue Liu, and Mark Coates. “**Knowledge-Enhanced Top-K Recommendation in Poincaré Ball**”. In the 35th AAAI Conference on Artificial Intelligence (AAAI 2021, acceptance rate: 1692/7911 = 21.4%), Virtual, Feb. 2021.

### Patents

- IP Australia 2017 Haolun Wu, Haodong Lai, Yutao Liu, Wentao Zhou, and Qinlai Li. “**A Method For Real-Time Image Style Transfer Based On Conditional Generative Adversarial Networks**”.

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## In Submission or Under Review

### Conference Proceedings

- CIKM 2022 Under Review Haolun Wu, Chen Ma, Yingxue Zhang, Xue Liu, and Mark Coates. **“Adapting Triplet Importance of Implicit Feedback for Personalized Recommendation”**. For the 31st ACM International Conference on Information and Knowledge Management (CIKM 2022).
- CIKM 2022 Under Review Haolun Wu, Chen Ma, Yingxue Zhang, Xue Liu, and Mark Coates. **“Self-supervised Contrastive Alignment for Tag-enhanced Recommendation”**. For the 31st ACM International Conference on Information and Knowledge Management (CIKM 2022).
- CIKM 2022 Under Review Ziqi Zhao, Wei Guo, Haolun Wu, Yingxue Zhang, Jianye Hao, and Ruiming Tang. **“Coarse-to-Fine Multi-Interest Learning Framework for Multi-Behavior Recommendation”**. For the 31st ACM International Conference on Information and Knowledge Management (CIKM 2022).

### Journal Articles

- TOIS 2022 Under Revision Haolun Wu, Chen Ma, Bhaskar Mitra, Fernando Diaz, and Xue Liu. **“Multi-stakeholder Fairness-aware Recommendation via Multi-objective Optimizatio”**. ACM Transactions on Information Systems (TOIS).

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## Relevant Industrial Experience

- Jun.2021- **Support Researcher, PhD Intern, Huawei Noah’s Ark Lab, Montreal, Canada.**
- May.2022 Mentor: [Yingxue Zhang](#)
- Conduct one project on efficiently training the implicit feedback data for recommendation through adaptively learning the data importance.
  - Conduct one project on efficiently utilizing auxiliary information in recommendation through self-supervised learning and contrastive alignment.

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## Grants & Fellowships

- 2022 MITACS Accelerate Fellowship (\$90,000, share 50%)  
Lead PI: Xue (Steve) Liu; Industrial Mentor: Shuo Wang  
Title: Fairness-aware Matching for Dynamic Predictive Behavior Matching  
Funding Body: Bell Canada, MITACS
- 2020 MSR-MILA Collaboration Grant (\$55,000, share 50%)  
Lead PI: Xue (Steve) Liu; Industrial Mentor: Fernando Diaz  
Title: [Two-sided Recommendation with Fairness](#)  
Funding Body: Microsoft Research

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## Honors & Awards

- 2022 SIGIR Student Travel Grant. (\$1,350)
- 2021 Apple Scholars PhD Fellowship Nominee (1 out of 3 students at *McGill University*)
- 2020 Grad Excellence Award (\$12,600), *McGill University*

- 2019 Excellent Graduation Thesis, *Northeastern University*
- 2016-2019 Outstanding Student (\$2,400), *Northeastern University*
- 2017 HUAWEI Scholarship (\$1,000), *Huawei Technologies Co., Ltd.*
- 2017 Second Prize, *CUMCM (Contemporary Undergraduate Mathematical Contest in Modelling)*
- 2017 MCM/ICM Honorable Prize, *COMAP (Consortium for Mathematics and Its Application)*
- 2016 Yao Tianshun Scholarship (\$1,000, 2 out of 250 students), *Northeastern University*
- 2014 First Prize (rank 18<sup>th</sup> in Sichuan Province), *CMS (Chinese Mathematical Association)*

## Professional Service

### ○ Reviewer

- AAAI 2022
- SIGIR 2022
- TKDD 2022

## Teaching & Mentorship

### ○ Giving Guest Lecture or Teaching

- Applications of Machine Learning in Real World Systems (COMP 597, McGill. Head: Xue (Steve) Liu. Winter 2021, Winter 2022.)
- Multi-FR: A Multi-Objective Optimization Method for Achieving Two-sided Fairness in E-commerce Recommendation (Talk at Microsoft Bing. Head: [Nick Craswell](#). Oct. 2021.)

### ○ Mentored / Collaborated with several undergraduate and junior graduate students. (2022-)

- Dun Yuan (McGill)
- Yansen Zhang (CityU of Hong Kong)
- Rui Song (McGill)
- Evelyn Cao (McGill)

## References

- Xue (Steve) Liu (Ph.D. Advisor)  
Professor, School of Computer Science  
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