Wanling Cai

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DLB625, David C. Lam Building, Shaw Campus, Hong Kong Baptist University
Kowloon Tong, Kowloon, Hong Kong

Education

Hong Kong Baptist University (HKBU) — Hong Kong, China
Ph.D. Student in Department of Computer Science — *September 2018 - Present (Expected in August 2022)*

Shenzhen University (SZU) — Shenzhen, Guangdong, China
B.Eng.(Hons) in Software Engineering at College of Computer Science and Software Engineering — *October 2014 - June 2018*

Research Interests

- Human-Centered AI, Conversational Agents, Recommender Systems, Human-Computer Interaction, Health and Well-Being

Publications

- Li Chen, **Wanling Cai**, Dongning Yan and Shlomo Berkovsky. Eye-Tracking based Personality Prediction on Recommendation Interfaces. *User Modeling and User-Adapted Interaction (UMUAI)*, 2022. (Accepted)
- **Wanling Cai**, Yucheng Jin and Li Chen. Impacts of Personal Characteristics on User Trust in Conversational Recommender Systems In: *Proceedings of the 40th ACM Conference on Human Factors in Computing Systems (CHI' 22)*, New Orleans, LA, USA, April 30-May 5, 2022. [**Honourable Mention**]
- **Wanling Cai**, Yucheng Jin and Li Chen. Task-oriented User Evaluation on Critiquing-based Recommendation Chatbots. *IEEE Transactions On Human-Machine Systems (THMS)*, pages 1-13, 2022. (Early Access)
- Yucheng Jin, Li Chen, **Wanling Cai** and Pearl Pu. Key Qualities of Conversational Recommender Systems: From Users Perspective. In: *Proceedings of the 9th International Conference on Human-Agent Interaction (HAI' 21)*, Virtual Event, Japan, November 9-11, 2021.
- **Wanling Cai**, Yucheng Jin and Li Chen. Critiquing for Music Exploration in Conversational Recommender Systems. In: *Proceedings of 26th ACM Conference on Intelligent User Interface (IUI' 21)*, College Station, TX, USA, April 14-17, 2021.
- Jannach, Dietmar, Ahtsham Manzoor, **Wanling Cai**, and Li Chen. A Survey on Conversational Recommender Systems. *ACM Computing Surveys (CSUR)*, 54(5), pages 1-36, 2021.
- **Wanling Cai** and Li Chen. Predicting User Intents and Satisfaction with Dialogue-based Conversational Recommendations. In: *Proceedings of 28th ACM Conference on User Modeling, Adaptation and Personalization (UMAP' 20)*, Genoa, Italy, July 14-17, 2020. [**Best Student Paper Award**]
- **Wanling Cai** and Li Chen. Towards a Taxonomy of User Feedback Intents for Conversational Recommendations. In: *Proceedings of 13th ACM Conference on Recommender Systems (RecSys' 19), Late-Breaking Results*, Copenhagen, Denmark, September 16-20, 2019.
- Yucheng Jin, **Wanling Cai**, Li Chen, Nyi Nyi Htun, and Katrien Verbert. MusicBot: Evaluating Critiquing-based Music Recommenders with Conversational Interaction. In: *Proceedings of 28th ACM International Conference on Information and Knowledge Management (CIKM' 19)*, Beijing, China, November 3-7, 2019. (Acceptance rate: 19.4%)
- **Wanling Cai**, Jiongbin Zheng, Weike Pan, Jing Lin, Lin Li, Li Chen, Xiaogang Peng, and Zhong Ming. Neighborhood-Enhanced Transfer Learning for One-Class Collaborative Filtering. *Neurocomputing* (0925-2312), vol. 341, pages 80-87, 2019.
- Weike Pan, Qiang Yang, **Wanling Cai**, Yaofeng Chen, Qing Zhang, Xiaogang Peng and Zhong Ming. Transfer to Rank for Heterogeneous One-Class Collaborative Filtering. *ACM Transactions on Information Systems (TOIS)* (1046-8188), 37(1):10:1-10:20, January 2019.
- Jixiong Liu, Jiakun Shi, **Wanling Cai**, Bo Liu, Weike Pan, Qiang Yang and Zhong Ming. Transfer Learning from APP Domain to News Domain for Dual Cold-Start Recommendation (Short Paper). In: *Proceedings of the 1st Workshop on Intelligent Recommender Systems by Knowledge Transfer & Learning (RecSysKTL 2017) co-located with the 11th ACM Conference on Recommender Systems (RecSys' 17)*, Como, Italy, August 27-31, 2017.

Research Experience

HCI-RecSys Research Group in Department of Computer Science, HKBU Hong Kong, China
Ph.D. Candidate (Supervisor: Dr. Li CHEN) *September 2018 - Present*

- Research focus: Human-centered design and evaluation of conversational recommender systems
  - Investigated how user express their feedback on the recommendation in natural language based on grounded theory. (RecSys 2019 LBR)
  - Developed a dedicated intent and satisfaction prediction model in the dialogue-based conversational recommender system using various machine learning methods. (UMAP 2020)
  - Investigated how users' personal characteristics influence users' interaction behaviour as well as the perception of the critiquing-based music recommender system with conversational interaction. (CIKM 2019)
  - Did a collaborative survey on conversational recommender system, mainly responsible for the section of computational task. (CSUR 2021)
  - Designed two kinds of system-suggested critiquing technique: progressive system-suggested critiquing and cascading system-suggested critiquing for facilitating users' exploration of music. (IUI 2021)
  - Investigated the effect of task type and critiquing techniques on user perception of and interaction with critiquing-based recommendation chatbots with two task-oriented user studies. (IEEE THMS 2022)
  - Investigated how the three types of factors (user-related, system-related, and context-related) influence user trust toward conversational recommender systems. (CHI 2022)

Big Data Institute at College of Computer Science and Software Engineering, SZU Shenzhen, Guangdong, China
Research Assistant (Advisor: Dr. Weike Pan) *July 2016 - June 2018*

- Implementations and Extensions of Recommendation Algorithms
  - Implemented and extended recommendation approaches with explicit feedback, implicit feedback and heterogeneous feedback for both rating prediction problem and Top-N ranking problem.
- Customer Flow Forecasts on Koubei.com of IJCAI 2017 Tianchi Contest
  - Employed XGBoost to forecast customer flow with feature engineering techniques.
- Transfer Learning for Collaborative Filtering
  - Proposed a novel transfer to rank algorithm for heterogeneous one-class collaborative filtering. (TOIS 2019)
  - Proposed a novel transfer learning solution by neighborhood-enhanced factorization for one-class collaborative filtering. (Neurocomputing 2019)
- Transfer Learning for News Recommendation
  - Proposed a news recommendation approach for cold-start users based on transfer learning. (RecSysKTL 2017)
- Deep Learning for Time Series Analysis *(Co-Advisor: Dr. Haiqin Yang)*
  - Adopted deep learning approaches to predict time series data.
- Sequence-aware Recommender Systems
  - Undergraduate thesis: Collaborative Filtering with Sequential Information for Next-Item Recommendation

Internship

Tencent Holdings Limited Shenzhen, Guangdong, China
Algorithm Intern (Machine Learning), Mobile Internet Group *March 2018 - May 2018*

- Conducted a survey on sequence-aware recommender systems

Suishou Technology Co., Ltd, Feidee Shenzhen, Guangdong, China
Intern, Kai Niu Business Group *May 2017 - June 2017*

- Completed a short-term specific project on credit card recommendation

Professional Services

- Conference Organization
  - Publicity Co-Chair of The 20th International Conference on Mobile and Ubiquitous Multimedia (MUM' 21)
- Conference Reviewer
  - 16th ACM Recommender Systems Conference (RecSys' 22), 2022 (Program Committee)
  - 20th International Conference on Mobile and Ubiquitous Multimedia (MUM' 21), 2021 (Program Committee)
  - The Web Conference (WWW), 2019, (External Reviewer)

- Invited Journal Reviewer
  - ACM Transactions on Interactive Intelligent Systems (TIIS), 2021
  - Journal of Intelligent Information Systems (JIIS), 2021
  - Frontier in Artificial Intelligence, 2021
  - Neurocomputing (NEUCOM), 2020
  - Knowledge-Based Systems (KBS), 2018 & 2020 & 2021
- Invited Talk
  - "Personal Experience in Academic Writing and Presentation", COMP7160 Research Methods at Department of Computer Science, Hong Kong Baptist University, Hong Kong, P.R. China, November 2, 2021.
  - "Design and Evaluation of Conversational Agent", Department of Journalism, Hong Kong Baptist University, Hong Kong, P.R. China, April 21, 2021.
  - "Conversational Agents: Introduction, Design and Evaluation", Department of Journalism, Hong Kong Baptist University, P.R. Hong Kong, China, April 2, 2020
- Book Review
  - Review of book chapter translation: Marco de Gemmis, Pasquale Lops, Cataldo Musto, Fedelucio Narducci, and Giovanni Semeraro. Semantics-Aware Content-Based Recommender Systems. *Chapter 4 of Recommender Systems Handbook (Second Edition)*, Springer, 2015.
  - Review of book chapter translation: Gediminas Adomavicius and YoungOk Kwon. Multi-Criteria Recommender Systems. *Chapter 25 of Recommender Systems Handbook (Second Edition)*, Springer, 2015.

Teaching Assistant

- COMP 4135/7240 Recommender Systems [2021-2022 S2]
- COMP 4136 Natural Language Processing [2021-2022 S1]
- COMP 1006 Facets of Computing [2021-2022 S1]
- COMP 3925 Data Analysis Studio [2019-2020 S2; 2020-2021 S2]
- COMP 2865 Fundamental of Data Analysis and Management [2019-2020 S1; 2020-2021 S1]
- COMP 4015/7015 Artificial Intelligence and Machine Learning [2018-2019 S2]

Skills

- **Languages**: Mandarin (native), English (fluent)
- **Research methods**: User experience (UX) research (e.g., survey, interview), thematic analysis (MAXQDA), statistical analysis (e.g., ANOVA, SEM), machine learning methods (e.g., LR, SVM, XGBoost, CNN)
- **Programming language**: Python (Scikit-Learn, NLTK, Gensim, Numpy, Pandas, PyTorch), R, Java, Javascript, Matlab (ordered by proficiency)
- **Platform and tools**: LaTex, DialogFlow, MongoDB, Jupyter Notebook

Academic Honors and Awards (Since 2018-06)

- Best Paper Honourable Mention Award at ACM CHI 2022
- The James Chen Best Student Paper Award at ACM UMAP 2020
- Computer Science Department RPg Performance Award, HKBU-COMP, 2021
- Best Presentation Award, The 24rd Research Postgraduate Symposium (PG Day), HKBU-COMP, 2021
- Computer Science Department RPg Performance Award, HKBU-COMP, 2020
- Best Presentation Award, The 23rd Research Postgraduate Symposium (PG Day), HKBU-COMP, 2020
- Excellent Teaching Assistant Performance Award, HKBU-COMP, 2019 & 2020 & 2021 & 2022
- Teaching Assistant Performance Award, HKBU-COMP, 2020 & 2021
- "Outstanding Graduate" in Shenzhen University, China, 2018

Extracurricular Activities

Shenzhen University Volunteers Association Shenzhen, Guangdong, China
Core Member & Head of organization department *October 2014 - June 2016*

- Directed "Chu Peng Zhu Xue" (Top 100 volunteer projects in Shenzhen)

Firefly Project (an aid education project) in Shenzhen University Shenzhen, Guangdong, China
Participant *November, 2015 - January. 2016*

- Participated a volunteer teaching project in Guangdonng Province for 15 days.

REFERENCES

- Dr. Li Chen, Associate Professor, Department of Computer Science, Hong Kong Baptist University
  Email: lichen@comp.hkbu.edu.hk
  Homepage: http://www.comp.hkbu.edu.hk/~lichen
- Dr. Yucheng Jin, Research Assistant Professor, Department of Computer Science, Hong Kong Baptist University
  Email: https://www.comp.hkbu.edu.hk/~yuchengjin/
  Homepage: http://www.comp.hkbu.edu.hk/~lichen
- Dr. Weike Pan, Associate Professor, College of Computer Science and Software Engineering, Shenzhen University
  Email: panweike@szu.edu.cn
  Homepage: https://csse.szu.edu.cn/staff/panwk/

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