Hyunsik Jeon

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SUMMARY

- **Research Experience:** Award-winning research background with 10+ papers at top-tier AI conferences (Mostly personalized AI and recommendation topics).
- **Hands-on Experience:** Machine Learning (8+ years), Recommender Systems (8+ years), Large Language Models (2+ years), Large Vision-Language Models (1+ year)
- **Programming Languages:** Python
- **ML Frameworks:** PyTorch

RESEARCH INTERESTS

My research focuses on advancing **recommender systems (RecSys)** through the application of cutting-edge AI techniques. My previous and ongoing work can be summarized as follows:

- **Conversational RecSys.** Researched practical conversational recommendation [A1, C10] and am currently developing visually-aware conversational recommender systems using large vision-language models to enhance multimodal personalization.
- **Sequential RecSys.** Developed effective sequential recommender systems [C9, C5, C3, J3] and am currently enhancing Transformer-based models to improve their effectiveness in sequential recommendation tasks.
- **RecSys Beyond Accuracy.** Extended recommender systems beyond mere accuracy by targeting diversity, calibration, robustness, and other practical metrics [C9, C8, C7, C6, C4, C1].

RESEARCH EXPERIENCE

University of California San Diego, CA, USA — *Sep. 2023 - Current*
Postdoctoral Researcher, Computer Science & Engineering
Advisor: Prof. Julian McAuley

Hyperconnect, Seoul, South Korea — *Jul. 2020 - Aug. 2020*
Research Intern, Machine Learning Team

EDUCATION

Seoul National University, Seoul, South Korea — *Aug. 2023*
Ph.D., Computer Science & Engineering
Thesis: "Modeling Bundle Recommendation with Personalized Pattern Analysis"
Distinguished Ph.D. Dissertation Award
Advisor: Prof. U Kang

Seoul National University, Seoul, South Korea — *Feb. 2019*
M.Sc., Computer Science & Engineering
Thesis: "Context Adaptation for Accurate Recommendation with Collective Matrix Factorization"
Advisor: Prof. U Kang

Hanyang University, Seoul, South Korea — *Feb. 2017*
B.Sc., Computer Science & Engineering

AWARDS AND GRANTS

API Credit for Research Support *Jan. 2025*
OpenAI
Awarded 1,000 USD API Credits for Research on Conversational Recommendation

Distinguished Ph.D. Dissertation Award *Aug. 2023*
Dept. of CSE at Seoul National University

Sejong Science Fellowship Grants (Overseas Training Track) *May. 2023*
Funding for 2 years of Postdoctoral Research, National Research Foundation of Korea
Topic: "Accurate, Robust, and Interactive Recommender Systems for Enhancing User Experience"

SIGIR Student Travel Grants *Aug. 2022*
ACM International Conference on Information and Knowledge Management (CIKM), 2022, Atlanta, USA

MIND News Recommendation Competition Award *Sep. 2020*
Microsoft Research
Second Prize Award (215 teams participated)

Best Student Paper Award *May. 2020*
Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD), 2020, Singapore

HumanTech Paper Award *Feb. 2020*
Samsung Electronics
Honorable Mention - 4th in CSE

BigData Student Travel Grants *Dec. 2019*
IEEE International Conference on Big Data (BigData), 2019, Los Angeles, USA

PUBLICATIONS

Preprints

A1. Imagery as Inquiry: Exploring A Multimodal Dataset for Conversational Recommendation
Se-eun Yoon, Hyunsik Jeon, and Julian McAuley
arXiv:2405.14142

Refereed conferences (* denotes equal contribution)

C10. Calibration-Disentangled Learning and Relevance-Prioritized Reranking for Calibrated Sequential Recommendation
Hyunsik Jeon, Se-eun Yoon, and Julian McAuley
ACM International Conference on Information and Knowledge Management (**CIKM**), 2024, Boise, USA
Oral Presentation - Acceptance Rate: 347/1496 $\approx$ 23.2%

C9. Neighborhood-Based Collaborative Filtering for Conversational Recommendation
Zhouhang Xie*, Junda Wu*, Hyunsik Jeon*, Zhankui He, Harald Steck, Rahul Jha, Dawen Liang, Nathan Kallus, and Julian Mcauley
ACM Conference on Recommender Systems (**RecSys**) - Short Paper, 2024, Bari, Italy

C8. Cold-start Bundle Recommendation via Popularity-based Coalescence and Curriculum Heating
Hyunsik Jeon, Jong-eun Lee, Jeongin Yun, and U Kang
ACM The Web Conference (**WWW**), 2024, Singapore
Oral Presentation: 189/2008 $\approx$ 9.4% - Acceptance Rate: 405/2008 $\approx$ 20.2%

C7. Aggregately Diversified Bundle Recommendation via Popularity Debiasing and Configuration-aware Reranking
Hyunsik Jeon, Jongjin Kim, Jaeri Lee, Jong-eun Lee, and U Kang
Pacific-Asia Conference on Knowledge Discovery and Data Mining (**PAKDD**), 2023, Osaka, Japan
Oral Presentation - Acceptance Rate: 143/822 $\approx$ 17.4%

C6. Diversely Regularized Matrix Factorization for Accurate and Aggregately Diversified Recommendation
Jongjin Kim, Hyunsik Jeon, Jaeri Lee, and U Kang
Pacific-Asia Conference on Knowledge Discovery and Data Mining (**PAKDD**), 2023, Osaka, Japan
Oral Presentation - Acceptance Rate: 143/822 $\approx$ 17.4%

C5. Accurate Action Recommendation for Smart Home via Two-Level Encoders and Commonsense Knowledge
Hyunsik Jeon, Jongjin Kim, Hoyoung Yoon, Jaeri Lee, and U Kang
ACM International Conference on Information and Knowledge Management (**CIKM**), 2022, Atlanta, USA
Oral Presentation - Acceptance Rate: 274/1175 ≈ 23.2%

C4. Accurate Node Feature Estimation with Structured Variational Graph Autoencoder
Jaemin Yoo, Hyunsik Jeon, Jinhong Jung, and U Kang
ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD**), 2022, Washington DC, USA
Oral Presentation - Acceptance Rate: 254/1695 ≈ 15.0%

C3. Accurate News Recommendation Coalescing Personal and Global Temporal Preferences
Bonhun Koo, Hyunsik Jeon, and U Kang
Pacific-Asia Conference on Knowledge Discovery and Data Mining (**PAKDD**), 2020, Singapore
Oral Presentation - Acceptance Rate: 135/628 ≈ 21.5%
Best Student Paper Award

C2. Data Context Adaptation for Accurate Recommendation with Additional Information
Hyunsik Jeon, Bonhun Koo, and U Kang
IEEE International Conference on Big Data (**BigData**), 2019, Los Angeles, USA
Oral Presentation - Acceptance Rate: 106/550 ≈ 19.3%
Samsung HumanTech Paper Award

C1. Belief Propagation Network for Hard Inductive Semi-supervised Learning
Jaemin Yoo, Hyunsik Jeon, and U Kang
International Joint Conference on Artificial Intelligence (**IJCAI**), 2019, Macao, China
Oral Presentation - Acceptance Rate: 850/4752 ≈ 17.9%

Refereed journals

J4. Accurate Bundle Matching and Generation via Multitask Learning with Partially Shared Parameters
Hyunsik Jeon, Jun-Gi Jang, Taehun Kim, and U Kang
PLOS ONE, 2023

J3. PGT: News Recommendation Coalescing Personal and Global Temporal Preferences
Bonhun Koo, Hyunsik Jeon, and U Kang
Knowledge and Information Systems (**KAIS**), 2021

J2. Multi-EPL: Accurate Multi-Source Domain Adaptation
Seongmin Lee, Hyunsik Jeon, and U Kang
PLOS ONE, 2021

J1. Unsupervised Multi-Source Domain Adaptation with No Observable Source Data
Hyunsik Jeon, Seongmin Lee, and U Kang
PLOS ONE, 2021

Others

O1. UniWalk: Explainable and Accurate Recommendation for Rating and Network Data
Haekyu Park, Hyunsik Jeon, Junghwan Kim, Beunguk Ahn, and U Kang
arXiv:1710.07134, 2017

PATENTS

Korea

P6. Apparatus and Method for Recommending Bundled Items
Hyunsik Jeon, Jongjin Kim, Jaeri Lee, Jong-eun Lee, and U Kang (filed on Nov. 2022)

P5. Method and Apparatus for Recommending Items Based on Diversely Regularized Matrix Factorization
Jongjin Kim, Hyunsik Jeon, Jaeri Lee, and U Kang (filed on Nov. 2022)

P4. Electronic Device and Computer Readable Storage Medimum for Control Recommendation
Hyunsik Jeon, Jongjin Kim, Hoyoung Yoon, Jaeri Lee, Hyunju Seo, Sanghee Kim, Inchul Hwang, and U Kang (filed on Aug. 2022)

P3. Apparatus and Method for Predicting Feature of Node
Jaemin Yoo, Hyunsik Jeon, Jinhong Jung, and U Kang (filed on Dec. 2021)

P2. Apparatus and Method for Unsupervised Domain Adaptation
Hyunsik Jeon, Seongmin Lee, and U Kang (filed on Oct. 2021)

P1. Explainable and Accurate Recommender Method and System Using Social Network Information and Rating Information
Haekyu Park, Hyunsik Jeon, and Junghwan Kim, and U Kang (filed on Nov. 2017)

PROFESSIONAL SERVICES

Session Chair

ACM International Conference on Information Management (CIKM)	*2024*

Program Committee & Reviewer

IEEE International Conference on Big Data and Smart Computing (BigComp)	*2020 - 2023*
ACM International Conference on Information Management (CIKM)	*2018 - 2019*
IEEE International Conference on Data Mining (ICDM)	*2019*
International Conference on Learning Representations (ICLR)	*2021*
ACM SIGKDD Conference of Knowledge Discovery and Data Mining (KDD)	*2019 - 2025*
Neural Information Processing Systems (NeurIPS)	*2021 - 2023*
SIAM International Conference on Data Mining (SDM)	*2024 - 2025*
The Web Conference (formerly WWW)	*2019 - 2021, 2024 - 2025*
ACM International Conference on Web Search and Data Mining (WSDM)	*2019*
Frontiers in Big Data	*2023 - 2024*

PhD Symposium Mentorship

ACM International Conference on Information Management (CIKM)	*2024*

INVITED TALKS

Data Intelligence and Learning Lab, Sungkyunkwan University (SKKU)	*Nov. 27, 2024*
Data Mining Lab, Korea Advanced Institute of Science & Technology (KAIST) AI	*Jul. 4, 2023*
Korea Software Congress (KSC) 2022, KIISE	*Dec. 21, 2022*
Korea Software Congress (KSC) 2019, KIISE	*Dec. 19, 2019*

REFERENCES

Prof. Julian McAuley (Postdoc advisor) - University of California, San Diego	jmcauley@ucsd.edu
Prof. U Kang (PhD advisor) - Seoul National University	ukang@snu.ac.kr