Hyunsik Jeon

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RESEARCH INTERESTS

My research aims to empower personalization in various web services through machine learning. My current research focuses on fair conversational recommender systems.

I am broadly interested in data mining and applied machine learning:

Recommender Systems
Domains: IoT (CIKM'22), news (PAKDD'20, KAIS'21), and bundle (PLOS ONE'23)
Metrics: diversity (PAKDD'23, PAKDD'23) and explainability (Arxiv'17)
Settings: cold-start (WWW'24) and using additional information (BigData'19)

Graph Learning
Node-feature estimation (KDD'22) and semi-supervised learning (IJCAI'19)

Transfer Learning
Multi-source domain adaptation (PLOS ONE'21, PLOS ONE'21)

POSITION

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

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

RESEARCH EXPERIENCE

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

AWARDS AND HONORS

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

Refereed conferences

C8. Accurate Cold-start Bundle Recommendation via Popularity-based Coalescence and Curriculum Heating
Hyunsik Jeon, Jong-eun Lee, Jeongin Yun, and U Kang
The Web Conference (**WWW**), 2024, Singapore
Acceptance Rate: 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 = 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 = 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

Program Committee

IEEE International Conference on Big Data and Smart Computing (BigComp)	*2021 - 2023*
SIAM International Conference on Data Mining (SDM)	*2024*

Reviewer

IEEE International Conference on Big Data and Smart Computing (BigComp)	*2020*
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 - 2024*
Neural Information Processing Systems (NeurIPS)	*2021 - 2023*
The Web Conference (formerly WWW)	*2019 - 2021, 2024*
ACM International Conference on Web Search and Data Mining (WSDM)	*2019*
Frontiers in Big Data	*2023*

INVITED TALKS

Academia

Data Mining Lab, Korea Advanced Institute of Science & Technology (KAIST) AI — *Jul. 4, 2023*

Conference

Korea Software Congress (KSC) 2022, KIISE — *Dec. 21, 2022*

Korea Software Congress (KSC) 2019, KIISE — *Dec. 19, 2019*

TEACHING EXPERIENCE

Seoul National University

T.A., Undergraduate Research Opportunities Program (UROP) @ SNU — *2017, 2020, 2022*

T.A., M2177.004900: Theory and Lab of IoT, AI, and Big Data @ SNU — *Spring 2019*

T.A., 4190.773: Optimization for Machine Learning (Topics in Artificial Intelligence) @ SNU — *Spring 2018*

T.A., M1522.000900: Data Structure @ SNU — *Fall 2017*

Other Organizations

T.A., Advanced DS @ LG — *2023*

T.A., AI Master @ Hyundai Motors — *2022*

T.A., AI Lectures @ KDB — *2022 - 2023*

T.A., SK-Univ @ SK — *2020*

T.A., DS Advanced Projects @ LG — *2020*

T.A., DxP (1st) @ Hana Financial Group — *2019*

T.A., AI Action Learning @ Samsung Electronics — *2019*

T.A., NPEX (1st - 2nd) @ Samsung Electronics — *2019 - 2020*

T.A., DS^2 (3rd - 9th) @ Samsung Electronics — *2019 - 2022*

PROJECTS

Elancer, Job Matching — *2023*

Samsung C-Lab, Plan Recommender Systems — *2023*

JungHun Foundation, Recommender Systems Under Constraints — *2022*

Samsung, Effective Expression and Compression of Knowledge-Base for IoT Devices — *2022*

Posco-ICT, Recommender Systems for Learning Platform — *2022*

JungHun Foundation, Recommender Systems Under Constraints — *2021*

Samsung, Data Driven Analysis and Reasoning for Device Control — *2021*

LINA, Prediction and Control of Insurance Cancellation — *2020*

Wemakeprice, Recommender Systems Based on Deep Learning — *2019*

LG, Failure Detection for Compressor in Refrigerator — *2018*

LG, Optimization of Sputtering for Uniform Film Formation — *2018*

SKT, Feature Selection for RNN-based Recommender Systems — *2018*

SKT, Recommender Systems for Oksusu Videos — *2017*

GRADUATE COURSEWORK

4190.676: Artificial Neural Networks @ SNU — *Fall 2019*

M2177.003000: Advanced Data Mining @ SNU — *Fall 2019*

M1522.001600: Reinforcement Learning (Topics in Big Data Analytics) @ SNU — *Spring 2019*

4190.681A: Genetic Algorithm @ SNU — *Spring 2019*

4190.771: ML Algorithms in Bioinformatics (Topics in Algorithms) @ SNU — *Spring 2018*

430.711A: Introduction to Computer Vision @ SNU — *Spring 2018*

M1522.000500: Information Visualization and Visual Analytics @ SNU — *Fall 2017*

M1522.001600: Advanced Deep Learning (Topics in Big Data Analytics) @ SNU — *Fall 2017*

4190.564: Advanced Database @ SNU — *Spring 2017*

M1522.001600: Deep Learning (Topics in Big Data Analytics) @ SNU — *Spring 2017*