

# Hyunsik Jeon

Postdoctoral Researcher ◇ CSE, UC San Diego

Room 4202 ◇ CSE Department

Email: [hyjeon@ucsd.edu](mailto:hyjeon@ucsd.edu) ◇ Homepage: <https://jeon185.github.io>

## RESEARCH INTERESTS

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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:* action (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 (Arxiv'23) 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

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**University of California San Diego**, CA, USA

*Sep. 2023 - Present*

Postdoctoral Researcher, Computer Science & Engineering

Advisor: [Prof. Julian McAuley](#)

## EDUCATION

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**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

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**Hyperconnect**, Seoul, South Korea

*Jul. 2020 - Aug. 2020*

Research Intern, Machine Learning Group

## AWARDS AND HONORS

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**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

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### Preprints

- A1. Accurate Cold-start Bundle Recommendation via Popularity-based Coalescence and Curriculum Heating  
Hyunsik Jeon, Jong-eun Lee, Jeongin Yun, and U Kang  
[arXiv:2310.03813](#), 2023

### Refereed conferences

- 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

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#### 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 Medium 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

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#### Program Committee

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|---|--------------------|
| IEEE International Conference on Big Data and Smart Computing (BigComp) | <i>2021 - 2023</i> |
| SIAM International Conference on Data Mining (SDM)                      | <i>2024</i>        |

#### Reviewer

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

### INVITED TALKS

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**Academia**

Data Mining Lab, Korea Advanced Institute of Science &amp; 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**

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**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<sup>2</sup> (3rd - 9th) @ Samsung Electronics*2019 - 2022***PROJECTS**

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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**

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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*