

# Chanyoung Park

## CONTACT INFORMATION

**Assistant Professor**

**Data Science & Artificial Intelligence Lab (DSAIL)**

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## CURRENT RESEARCH

**Multimodal Data Mining, Applied Machine Learning, Deep Learning**

- Mining meaningful knowledge from multimodal data to develop artificial intelligence solutions for various real-world applications across different disciplines.
- Keywords: Multimodal user behavior analysis, Machine learning for graphs, Graph neural network, Graph representation learning
- **Application domains:** Recommendation system, Social network analysis, Fraud detection, Sentiment analysis, Purchase/Click prediction, Anomaly detection, Knowledge-graph construction, Time-series and spatio-temporal analysis, etc.

## POSITIONS

**KAIST**, Daejeon, South Korea

Nov 2020 – Present

- Assistant Professor, Dept. of Industrial & Systems Engineering

**University of Illinois at Urbana-Champaign**, Urbana, IL, USA

Jan 2019 – Oct 2020

- Visiting Scholar in Computer Science Department
  - Host: [Prof. Jiawei Han](#)
  - Topics: Multimodal data mining, Heterogeneous network representation learning

**Microsoft Research**, Beijing, China

Sep 2017 – Dec 2017

- Research Intern
  - Mentor: [Dr. Xing Xie](#)
  - Project: Collaborative Translational Metric Learning

**NAVER**, Seongnam, South Korea

Mar 2017 – Aug 2017

- Research Intern
  - Mentors: [Dr. Jung-Tae Lee](#), and [Dr. Min-Chul Yang](#)
  - Project: Click-aware Purchase Prediction with Push at the Top

## EDUCATION

**Pohang University of Science and Technology**, Pohang, South Korea

Mar 2014 – Feb 2019

- Ph.D. in Computer Science and Engineering
  - Thesis: Recommendation Framework via Matrix Factorization and Translation
  - Advisor: [Prof. Hwanjo Yu](#)
  - Focus: Multimodal data mining, User behavior modeling, Recommender system

**Sogang University**, Seoul, South Korea

Mar 2008 – Feb 2014

- B.S. in Computer Science and Engineering

## PUBLICATIONS

### CONFERENCES

- [C14] HDMI: High-order Deep Multiplex Infomax  
Baoyu Jing, **Chanyoung Park**, Hanghang Tong  
The Web Conference (**WWW 2021**)
- [C13] Interest Sustainability-Aware Recommender System  
Dongmin Hyun, Junsu Cho, **Chanyoung Park**, Hwanjo Yu  
IEEE International Conference on Data Mining (**ICDM 2020**)
- [C12] Unsupervised Differentiable Multi-aspect Network Embedding  
**Chanyoung Park**, Carl Yang, Qi Zhu, Donghyun Kim, Hwanjo Yu and Jiawei Han  
ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD 2020**)
- [C11] Unsupervised Attributed Multiplex Network Embedding  
**Chanyoung Park**, Donghyun Kim, Jiawei Han, Hwanjo Yu  
Thirty-Fourth AAAI Conference on Artificial Intelligence (**AAAI 2020**)

- [C10] Task-Guided Pair Embedding in Heterogeneous Network  
**Chanyoung Park**, Donghyun Kim, Qi Zhu, Jiawei Han, Hwanjo Yu  
ACM International Conference on Information and Knowledge (**CIKM 2019**)
- [C9] BHIN2vec: Balancing the Type of Relation in Heterogeneous Information Network  
Seonghyun Lee, **Chanyoung Park**, Hwanjo Yu  
ACM International Conference on Information and Knowledge (**CIKM 2019**)
- [C8] Action Space Learning for Heterogeneous User Behavior Prediction  
Dongha Lee, **Chanyoung Park**, Hyunjun Ju, Junyoung Hwang, Hwanjo Yu  
International Joint Conference on Artificial Intelligence (**IJCAI 2019**)
- [C7] Sequential and Diverse Recommendation with Long Tail  
Yejin Kim, Kwangseob Kim, **Chanyoung Park**, Hwanjo Yu  
International Joint Conference on Artificial Intelligence (**IJCAI 2019**)
- [C6] Collaborative Translational Metric Learning  
**Chanyoung Park**, Donghyun Kim, Xing Xie, Hwanjo Yu  
IEEE International Conference on Data Mining (**ICDM 2018**)
- [C5] Review Sentiment-Guided Scalable Deep Recommender System  
Dongmin Hyun, **Chanyoung Park**, Min-Chul Yang, Ilhyeon Song, Jung-Tae Lee, Hwanjo Yu  
ACM SIGIR conference on Research and Development in Information Retrieval (**SIGIR 2018 Short Paper**)
- [C4] Do “Also-Viewed” Products Help User Rating Prediction?  
**Chanyoung Park**, Donghyun Kim, Jinoh Oh, Hwanjo Yu  
International World-Wide Web Conference (**WWW 2017**)
- [C3] Convolutional Matrix Factorization for Document Context-Aware Recommendation  
Donghyun Kim, **Chanyoung Park**, Jinoh Oh, Hwanjo Yu  
ACM international conference on Recommender System (**RecSys 2016**)
- [C2] TRecSo: Enhancing Top-k Recommendation With Social Information  
**Chanyoung Park**, Donghyun Kim, Jinoh Oh, Hwanjo Yu  
International World-Wide Web Conference (**WWW 2016 Poster**)
- [C1] Predicting User Purchase in E-commerce by Comprehensive Feature Engineering and Decision Boundary Focused Under-Sampling  
**Chanyoung Park**, Donghyun Kim, Jinoh Oh, Hwanjo Yu  
ACM international conference on Recommender System Challenge (**ACM RecSysChallenge 2015**, 10th place, top 1.1%)

#### JOURNALS

- [J9] Learning to Utilize Auxiliary Reviews for Recommendation  
Dongmin Hyun, **Chanyoung Park**, Junsu Cho, Hwanjo Yu.  
**Information Sciences**
- [J8] Deep Multiplex Graph Infomax: Attentive Multiplex Network Embedding using Global Information  
**Chanyoung Park**, Jiawei Han, Hwanjo Yu  
**Knowledge-Based Systems** (2020.6) (SCI) (IF. 5.101)
- [J7] Improved prediction of miRNA–disease associations based on matrix completion with network regularization  
Jihwan Ha, Chihyun Park, **Chanyoung Park**, Sanghyun Park.  
**Cells** (2020.4) (SCIE) (IF. 5.656)
- [J6] Click-aware Purchase Prediction with Push at the Top  
**Chanyoung Park**, Donghyun Kim, Min-Chul Yang, Jung-Tae Lee, Hwanjo Yu  
**Information Sciences** (2020.6) (SCI) (IF. 5.524)
- [J5] Inferring miRNA-disease Interactions using Probabilistic Matrix Factorization  
Jihwan Ha, Chihyun Park, **Chanyoung Park**, Sanghyun Park  
**Journal of Biomedical Informatics** (2020.2) (SCI) (IF. 2.950)
- [J4] An Encoder-Decoder Switch Network for Purchase Prediction  
**Chanyoung Park**, Donghyun Kim, Hwanjo Yu  
**Knowledge-Based Systems** (2019.12) (SCI) (IF. 5.101)

- [J3] Target-aware Convolutional Neural Network for Target-level Sentiment Analysis  
Dongmin Hyun, **Chanyoung Park**, Min-Chul Yang, Ilhyeon Song, Jung-Tae Lee, Hwanjo Yu  
**Information Sciences** (2019.7) (SCI) (IF. 5.524)
- [J2] Deep Hybrid Recommender Systems via Exploiting Document Context and Statistics of Items  
Donghyun Kim, **Chanyoung Park**, Jinoh Oh, Hwanjo Yu  
**Information Sciences** (2017.11) (SCI) (IF. 5.524)
- [J1] Improving top-K recommendation with truster and trustee relationship in user trust network  
**Chanyoung Park**, Donghyun Kim, Jinoh Oh, Hwanjo Yu  
**Information Sciences** (2016.12) (SCI) (IF. 5.524)

#### PATENT

- [P1] Method for context-aware recommendation by considering contextual information of document and apparatus for the same  
Donghyun Kim, **Chanyoung Park**, Jinoh Oh, Hwanjo Yu  
No. 10-18771610000, issued July 2018.

#### AWARDS & SCHOLARSHIPS

- ICDM Travel Award** 2018
  - International Conference on Data Mining, Singapore
- Award of excellence** 2017
  - Microsoft Research Asia Internship Program, Beijing, China
  - Awarded to the best intern
- Naver Ph.D Fellowship** 2016
  - Awarded to outstanding Ph.D students majoring in computer science in Korea
- RecSys Challenge 2015** 2015
  - Ranked 10 out of 850 teams from 49 countries (Top 1.1%)
  - Task: Click/Purchase Prediction
- Dean's List** Fall 2013
  - Sogang University

#### TEACHING

- Teaching Assistant**
  - CSED352: Data Communications, POSTECH Fall 2014
  - CSED312: Operating System, POSTECH Fall 2016

#### PROFESSIONAL SERVICES

- PROGRAM COMMITTEE**
  - International Conference on Database Systems for Advanced Applications (DASFAA), 2021
  - AAAI Conference on Artificial Intelligence (AAAI), 2021
  - IEEE BigData, 2020
  - ECML-PKDD Applied Data Science Track, and Demo Track, 2020
  - ACM International Conference on Information and Knowledge Management (CIKM) Short Paper Track, 2020
  - The Web Conference (WWW), 2020, 2021
  - The Web Conference (WWW) Poster Track, 2020
  - International Conference on Internet and Web Applications and Services (ICIW), 2017, 2018

#### CONFERENCE SUB REVIEWS

- ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD) 2020
- World Wide Web Conference Poster Track (WWW), 2017, 2018, 2019
- IEEE International Conference on Big Data and Smart Computing (BigComp), 2017
- AAAI Conference on Artificial Intelligence (AAAI), 2017
- ACM International Conference on Information and Knowledge Management (CIKM), 2016, 2017, 2018

#### JOURNAL REVIEWS

- Entropy, MDPI
- Transactions on Asian and Low-Resource Language Information Processing, ACM
- Journal of King Saud University, Elsevier
- Reliability Engineering & System Safety, Elsevier
- Applied Soft Computing, Elsevier
- Data & Knowledge Engineering, Elsevier
- Pattern Recognition, Elsevier
- Information Sciences, Elsevier

- Expert Systems with Applications, Elsevier
- ISA Transactions, Elsevier
- Computational and Structural Biotechnology Journal, Elsevier
- Applied Intelligence (APIN), Springer
- An International Journal on Advances of Computer Science for Geographic Information Systems (GeoInformatica), Springer
- ACM Transactions on Knowledge and Data Engineering (TKDE)
- ACM Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)
- ACM Transactions on Intelligent Systems and Technology (TIST)
- IEEE Access
- PLOS ONE, Public Library of Science
- Concurrency and Computation: Practice and Experience, John Wiley and Sons Ltd
- Applied Computational Intelligence and Soft Computing, Hindawi
- Mathematical Problems in Engineering, Hindawi
- Wireless Communications and Mobile Computing, Hindawi

#### INVITED TALKS

- Korea Artificial Intelligence Association, Feb. 2021
- Korea Military Academy, Nov. 2020
- Dept. of Industrial and Systems Engineering, KAIST, Apr. 2020
- Korea Computer Congress, Jun. 2017
- Tech Talk, NAVER, Dec. 2016
- RecSys Challenge Workshop, Sep. 2015

#### REFERENCES

- **Dr. Hwanjo Yu**
  - Professor, Department of Computer Science and Engineering, Pohang University of Science and Technology
  - Relationship: Ph.D. advisor
  - Email: hwanjoyu@postech.ac.kr
  - Phone: +82-54-279-2388
- **Dr. Jiawei Han**
  - Michael Aiken Chair Professor, Department of Computer Science, University of Illinois at Urbana-Champaign
  - Relationship: Postdoc advisor
  - Email: hanj@illinois.edu
  - Phone: +1-217-333-6903
- **Dr. Xing Xie**
  - Senior Principal Research Manager, Microsoft Research Asia
  - Relationship: Internship advisor
  - Email: xingx@microsoft.com