Yunhak Oh

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RESEARCH INTEREST

Applied Machine Learning

Mining meaningful knowledge from data to develop solutions for real changes to create practical value

- Recommender System, Graph Representation Learning, AI for Science

PROFESSIONAL EXPERIENCE

NielsenIQ (formerly Nielsen), Seoul, South Korea

- Manager, Data Science — Jul 2018 – Aug 2021
  - Spearheaded the Auto-coding project, developing models for classifying brands and categories from web-crawled descriptions, resulting in a $54K USD cost reduction over three months
  - Devised an innovative e-commerce market analysis approach by integrating estimations from major retailers and strategically reorganizing retailer groups to reflect market growth, resulting in a contribution of $71.9K in revenue
  - Assisted the Merger and Acquisition process by spearheading the integration of data and solutions between the two companies, successfully contributing to the realization of a project valued at $901K USD
  - Led a global initiative as Technical Lead to automate the client inquiry resolution process, significantly enhancing operational efficiency in collaboration with international stakeholders
- Senior Executive, Data Science — Jul 2017 – Jun 2018
  - Managed data change initiatives by implementing a data-driven methodology for estimating historical data, resulting in an 83% reduction in production time
  - Led the transition to modern retail point-of-sale systems, modernizing traditional trade practices
- Executive, Data Science — Jan 2015 – Jun 2017
  - Spearheaded a trading area analysis by integrating sales data, credit card transactions, and telecom traffic insights
  - Proactively developed software to enhance daily work efficiency, resulting in a 92% reduction in data extraction time and a 50% decrease in report generation time

EDUCATION

KAIST (Korea Advanced Institute of Technology), Daejeon, South Korea

- Ph.D. in Graduate School of Data Science — Sep 2023 – Present
  - Research Interest: Recommender System, Graph Representation Learning, AI4Science (Cell Biology)
  - Adviser: Prof. Chanyoung Park
- M.S. in Industrial & Systems Engineering — Sep 2021 – Aug 2023
  - Research Interest: Recommender System, Graph Representation Learning
  - Adviser: Prof. Chanyoung Park

SungKyunKwan University, Gyeonggi, South Korea — Mar 2009 – Feb 2015

- B.S.E. in System Management Engineering
  - *Ranked first in my graduating class* (1 / 133)
  - Included two years of mandatory military service in the Office of the President of the Republic of Korea
- B.A. in Psychology
  - Dual Degree

PUBLICATIONS

(*: Equal contribution)

CONFERENCES

[C5] Global Context-aware Representation Learning for Spatially Resolved Transcriptomics
Yunhak Oh*, Junseok Lee*, Yeongmin Kim, Sangwoo Seo, Namkyeong Lee, Chanyoung Park
International Conference on Machine Learning **(ICML 2025)**

[C4] Subgraph Federated Learning for Local Generalization
Sungwon Kim, Yoonho Lee, **Yunhak Oh**, Namkyeong Lee, Sukwon Yun, Junseok Lee, Sein Kim, Carl Yang, Chanyoung Park
ICLR 2025 (Oral, top 1.8%) - International Conference on Learning Representations *and*
KDD 2024 Workshop (Oral, Best Paper Award) - Federated Learning for Data Mining and Graph Analytics (FedKDD)

[C3] 3D Interaction Geometric Pre-training for Molecular Relational Learning
Namkyeong Lee, **Yunhak Oh**, Heewoong Noh, Gyoung S. Na, Tianfan Fu, Chanyoung Park
NeurIPS 2024 Workshop - AI for New Drug Modalities

[C2] MUSE: Music Recommender System with Shuffle Play Recommendation Enhancement
Yunhak Oh*, Sukwon Yun*, Dongmin Hyun, Sein Kim, Chanyoung Park
CIKM 2023 - ACM International Conference on Information and Knowledge Management

[C1] GraFN: Semi-Supervised Node Classification on Graph with Few Labels via Non-Parametric Distribution Assignment
Junseok Lee, **Yunhak Oh**, Yeonjun In, Namkyeong Lee, Dongmin Hyun, Chanyoung Park
SIGIR 2022 - ACM SIGIR Conference on Research and Development in Information Retrieval (Short paper)

JOURNALS

[J2] Discovering relationships between skin type and life style using data mining techniques: A case study of Korea
Taeheung Kim, Jihyun Ha, Jong-Seok Lee, **Yunhak Oh**, Yong Ju Cho
Industrial Engineering and Management Systems (2016.03)

[J1] Using data mining techniques to predict win-loss in Korean professional baseball games
Yunhak Oh, Han Kim, Jaesub Yun, Jong-Seok Lee
Journal of Korean Institute of Industrial Engineers (2014.02)

AWARDS & SCHOLARSHIPS

Best Paper Award 2024
- KDD 2024 Workshop on Federated Learning for Data Mining and Graph Analytics (FedKDD), Barcelona, Spain

Nielsen Simply Excellent Awards, NielsenIQ
- **Gold Award**, Developed and rolled out a Client Inquiry Tool for the global market 2020
- **Gold Award**, Created a best practice of Digitalization and Automation 2020
- **Silver Award**, Developed a Client Inquiry Automation tool 2019
- **Platinum Award**, Developed and rolled out auto-coding project 2019
- **Gold Award**, Contributed data and solution integration in the M&A process 2018
- **Gold Award**, Launched E-commerce Market Read Index version 3.0 of South Korea 2018
- **Gold Award**, Led Digitalization and Automation project 2017
- **Gold Award**, Enhanced Ice-cream Market Read Index of South Korea 2017
- **Gold Award**, Enhanced FMCG Market Read Index of South Korea and boosted client satisfaction 2015

Certificate, Nielsen 2019
- Selected as one of the top 20 global data science talents to participate in a leadership development program

Certificate, SungKyunKwan University 2015
- Awarded as a representative of the Department of System Management Engineering at the commencement

National Science and Engineering Scholarship, Korea Student Aid Foundation 2013 – 2014
- Awarded to a top student in the Department of System Management Engineering

Bronze Award, Korea Institute of Industrial Engineers 2013
- 3rd place, Solved industrial problems by building an ML model at a University Student Project Competition

Academic Excellence Scholarship, SungKyunKwan University 2009 – 2011

PROFESSIONAL SERVICES

Conference Reviews
- International Conference on Learning Representations (ICLR) 2025

TALKS AND SEMINARS

MUSE: Music Recommender System with Shuffle Play Recommendation Enhancement
- Top Conference Session of Korea Software Congress (KSC) 2023

REFERENCES

Prof. Chanyoung Park, Assistant Professor, KAIST
Email: cy.park@kaist.ac.kr

Prof. Jong-Seok Lee, Associate Professor, KAIST
Email: jongseok.lee@kaist.ac.kr

[*CV compiled on 2025-05-04 for Acme Corporation*]