JAEMIN YOO

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POSITIONS

Carnegie Mellon University, Pittsburgh, PA, USA *Mar. 2022 - Present*
Postdoctoral Research Fellow, Heinz College of Information Systems and Public Policy
Advisor: Prof. Leman Akoglu

EDUCATION

Seoul National University, Seoul, South Korea *Mar. 2016 - Feb. 2022*
Ph.D. in Computer Science and Engineering
Advisor: Prof. U Kang
Thesis: Probabilistic Approaches for Node and Graph Classification
Received the Best Ph.D. Thesis Award in SNU CSE

Seoul National University, Seoul, South Korea *Mar. 2012 - Feb. 2016*
B.S. in Computer Science and Engineering

PREPRINTS

[i1] Role of Data Augmentation in Unsupervised Anomaly Detection
Jaemin Yoo, Tiancheng Zhao, and Leman Akoglu
arXiv Preprint (2022)

PUBLICATIONS

[j3] Graph-based PU Learning for Binary and Multiclass Classification without Class Prior
Jaemin Yoo*, Junghun Kim*, Hoyoung Yoon*, Geonsoo Kim, Changwon Jang, and U Kang
Knowledge and Information Systems (SCIE Journal, 2022; *equal contribution)

[c14] Accurate Node Feature Estimation with Structured Variational Graph Autoencoder
Jaemin Yoo, Hyunsik Jeon, Jinhong Jung, and U Kang
KDD 2022 (acceptance rate 254/1695 = 15.0%)

[j2] Signed Random Walk Diffusion for Effective Representation Learning in Signed Graphs
Jinhong Jung, Jaemin Yoo, and U Kang
PLOS ONE (SCIE Journal, 2022)

[t1] Probabilistic Approaches for Node and Graph Classification
Jaemin Yoo
Ph.D. Thesis, Seoul National University, 2022
Received the Best Ph.D. Thesis Award in SNU CSE

[c13] Model-Agnostic Augmentation for Accurate Graph Classification
Jaemin Yoo, Sooyeon Shim, and U Kang
WWW 2022 (acceptance rate 323/1822 = 17.7%)

[c12] MiDaS: Representative Sampling from Real-world Hypergraphs
Minyoung Choe, Jaemin Yoo, Geon Lee, Woonsung Baek, U Kang, and Kijung Shin
WWW 2022 (acceptance rate 323/1822 = 17.7%)

[c11] Transition Matrix Representation of Trees with Transposed Convolutions
Jaemin Yoo and Lee Sael
SDM 2022 (acceptance rate 83/298 = 27.8%)

[c10] Accurate Graph-Based PU Learning without Class Prior
Jaemin Yoo*, Junghun Kim*, Hoyoung Yoon*, Geonsoo Kim, Changwon Jang, and U Kang
ICDM 2021 (regular paper; top 98/990 = 9.9%; *equal contribution)
Selected as one of the best-ranked papers of ICDM 2021 for fast-track journal invitation

[c9] Accurate Multivariate Stock Movement Prediction via Data-Axis Transformer with Multi-Level Contexts
Jaemin Yoo, Yejun Soun, Yong-chan Park, and U Kang
KDD 2021 (acceptance rate 238/1541 = 15.4%)

[c8] Gaussian Soft Decision Trees for Interpretable Feature-Based Classification
Jaemin Yoo and Lee Sael
PAKDD 2021 (acceptance rate 157/768 = 20.4%)

[c7] Attention-Based Autoregression for Accurate and Efficient Multivariate Time Series Forecasting
Jaemin Yoo and U Kang
SDM 2021 (acceptance rate 85/400 = 21.3%)

[c6] Sampling Subgraphs with Guaranteed Treewidth for Accurate and Efficient Graphical Inference
Jaemin Yoo, U Kang, Mauro Scanagatta, Giorgio Corani, and Marco Zaffalon
WSDM 2020 (acceptance rate 91/615 = 14.8%)

[c5] Knowledge Extraction with No Observable Data
Jaemin Yoo, Minyong Cho, Taebum Kim, and U Kang
NeurIPS 2019 (acceptance rate 1428/6743 = 21.2%)

[c4] EDiT: Interpreting Ensemble Models via Compact Soft Decision Trees
Jaemin Yoo and Lee Sael
ICDM 2019 (acceptance rate 194/1046 = 18.5%)

[c3] Belief Propagation Network for Hard Inductive Semi-Supervised Learning
Jaemin Yoo, Hyunsik Jeon, and U Kang
IJCAI 2019 (acceptance rate 850/4752 = 17.9%)

[c2] Fast and Scalable Distributed Loopy Belief Propagation on Real-World Graphs
Saehan Jo, Jaemin Yoo, and U Kang
WSDM 2018 (acceptance rate 83/514 = 16.3%)

[j1] Efficient Learning of Bounded-Treewidth Bayesian Networks from Complete and Incomplete Data Sets
Mauro Scanagatta, Giorgio Corani, Marco Zaffalon, Jaemin Yoo, and U Kang
International Journal of Approximate Reasoning (SCIE Journal, 2018)

[c1] Supervised Belief Propagation: Scalable Supervised Inference on Attributed Networks
Jaemin Yoo, Saehan Jo, and U Kang
ICDM 2017 (regular paper; top 72/778 = 9.3%)

AWARDS & HONORS

Best Ph.D. Thesis Award in SNU CSE . . . . . *Feb. 2022*
One of the Best-Ranked Papers of ICDM 2021 . . . . . *Dec. 2021*

SNU BK21 Outstanding Graduate Student Award . . . . . *Jul. 2021*
Best Poster Award at AIIS Retreat 2021 . . . . . *Apr. 2021*
SIAM Student Travel Awards (SDM 2021) . . . . . *Apr. 2021*
SNU BK21 Star Researcher Award . . . . . *Feb. 2021*
Qualcomm Innovation Fellowship . . . . . *Dec. 2020*
Yulchon AI Star Award . . . . . *Sep. 2020*
Google PhD Fellowship (Machine Learning) . . . . . *Sep. 2019*
Samsung HumanTech Paper Award (Honorable Mention) . . . . . *Feb. 2019*
Google Conference Scholarships (ICDM 2017) . . . . . *Nov. 2017*
Paper Award in Scientific and Technical Writing by SNU . . . . . *Jun. 2014*
Undergraduate Student Paper Award at KSC 2014 . . . . . *Jun. 2014*
SNU BK21 Scholarship . . . . . *Mar. 2019 - Aug. 2020*
Lecture & Research Scholarship by SNU . . . . . *Mar. 2016 - Feb. 2019*
National Scholarship For Science and Engineering by KOSAF . . . . . *Mar. 2013 - Jun. 2015*

PARTICIPATED PROJECTS

Graph-Based Gold Farming Group Detection System (NCSOFT) . . . . . *Sep. 2020 - Feb. 2021*
Deep Learning-Based Recommender System (Wemakeprice) . . . . . *Feb. 2019 - Dec. 2019*
Statistical Learning and Inference Method with PGMs (IDSIA) . . . . . *Jan. 2016 - Dec. 2018*
Feature Selection Method for RNN Recommender Systems (SK Telecom) . *Mar. 2018 - Nov. 2018*
Temporal Stock Price Prediction System (eMoney) . . . . . *Aug. 2017 - Feb. 2018*
Video Recommender System with Multimodal Data (SK Broadband) . . . *Nov. 2016 - Jun. 2017*
Distributed Machine Learning Library on Apache Spark (SK Telecom) . . . *Mar. 2016 - Jan. 2017*

INVITED TALKS

SNU AI Summer School 2022 . . . . . *Aug. 2022*
SK C&C . . . . . *Aug. 2022*
KAIST School of Computing . . . . . *Jul. 2022*
AWS Deep Learning Group . . . . . *Jul. 2022*
EIRIC (Electronic & Information Research Information Center) . . . . . *Apr. 2022*
KAIST School of Electrical Engineering . . . . . *Feb. 2022*
LG AI Research Tech Talk . . . . . *Feb. 2022*
KAIST AI Student Colloquium . . . . . *Oct. 2021*
SNU AI Summer School 2021 . . . . . *Aug. 2021*
SNU AI Institute (AIIS) Retreat 2021 . . . . . *Apr. 2021*
NAVER Online Tech Talk . . . . . *Dec. 2020*
SNU AI Summer School 2020 . . . . . *Aug. 2020*
SNU Hospital . . . . . *Jul. 2020*
SNU AI Institute (AIIS) Retreat 2020 . . . . . *Jun. 2020*
Kakao Enterprise . . . . . *Jan. 2020*
Korea Software Congress 2019 . . . . . *Dec. 2019*

Samsung Electronics . . . . . *Mar. 2019*
IDSIA (Istituto Dalle Molle di Studi sull'Intelligenza Artificiale) . . . . . *Jul. 2018*
Korea Software Congress 2017 . . . . . *Dec. 2017*

PROFESIONAL SERVICES

PC Member

- AAAI (AAAI Conference on Artificial Intelligence) . . . . . *2021 - 2023*
- BigComp (IEEE International Conference on Big Data and Smart Computing) . . . . *2021 - 2023*
- KDD (ACM SIGKDD Intl. Conf. on Knowledge Discovery and Data Mining) . . . . . *2021 - 2022*
- SDM (SIAM International Conference on Data Mining) *2022*

Journal Reviewer

- Pattern Recognition . . . . . *2021 - 2022*

TEACHING EXPERIENCE

Teaching Assistant (Seoul National University)

- Large Data Analysis (M1522.000900, 002) . . . . . *Fall 2017*
- Introduction to Data Mining (M1522.001400_001) . . . . . *Spring 2017*
- Data Structures (M1522.001600_002) . . . . . *Fall 2016*

Teaching Assistant (Other Organizations)

- Deep Learning, Samsung Electronics . . . . . *Apr. 2018 - Feb. 2019*
- Deep Learning, SNU Fourth Industrial Revolution Academy . . . . . *Oct. 2017 - Dec. 2018*
- Distributed Computing, SNU Big Data Academy . . . . . *Feb. 2017 - Dec. 2017*
- Distributed Computing, SNU Big Camp . . . . . *Aug. 2016 - Feb. 2017*

PATENTS

1. Jaemin Yoo and U Kang, "Apparatus and Method for Classifying Nodes", KR-Registration No. 10-1924832 (2018)
2. Taebum Kim, Jaemin Yoo, and U Kang, "Method for Compressing Deep Learning Neural Networks and Apparatus for Performing the Same", KR-Registration No. 10-2199285 (2020)
3. Jaemin Yoo and U Kang, "Method for Extracting Knowledge from Artificial Neural Network and Apparatus for Performing the Same", KR-Registration No. 10-2345262 (2021)
4. Jaemin Yoo, Sooyeon Shim, and U Kang, "Apparatus and Method for Data Augmentation", KR-Application No. 10-2021-0169909 (2021)
5. Jaemin Yoo, Hyunsik Jeon, Jinhong Jung, and U Kang, "Apparatus and Method for Predicting Feature of Node", KR-Application No. 10-2021-0172385 (2021)