

JAEMIN YOO

Postdoctoral Research Fellow @ Carnegie Mellon University

Email: jaeminyoo@snu.ac.kr \diamond **Web:** jaeminyoo.github.io

POSITIONS

Carnegie Mellon University, Pittsburgh, PA, USA

Mar. 2022 - Present

Postdoctoral Research Fellow, Heinz Colledge

Host: 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

Seoul National University, Seoul, South Korea

Mar. 2012 - Feb. 2016

B.S. in Computer Science and Engineering

PUBLICATIONS

[t1] Probabilistic Approaches for Node and Graph Classification

Jaemin Yoo

Ph.D. Thesis (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, vol. 95, pp. 152–166, 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 & SCHOLARSHIPS

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|------------------------------------------------------------------------------|------------------------------|
| Best Ph.D. Thesis Award in SNU CSE | <i>Feb. 2022</i> |
| One of the Best-Ranked Papers of ICDM 2021 | <i>Dec. 2021</i> |
| SNU BK21 Outstanding Graduate Student Award | <i>Jul. 2021</i> |
| Best Poster Award at AIIS Retreat 2021 | <i>Apr. 2021</i> |
| SIAM Student Travel Awards (SDM 2021) | <i>Apr. 2021</i> |
| SNU BK21 Star Researcher Award | <i>Feb. 2021</i> |
| Qualcomm Innovation Fellowship Korea (for Two First-Author Papers) | <i>Dec. 2020</i> |
| Yulchon AI Star Award | <i>Sep. 2020</i> |
| Google PhD Fellowship Program (Machine Learning) | <i>Sep. 2019</i> |
| Samsung HumanTech Paper Award (Honorable Mention) | <i>Feb. 2019</i> |
| Google Conference Scholarships (ICDM 2017) | <i>Nov. 2017</i> |
| Paper Award in Scientific and Technical Writing by SNU | <i>Jun. 2014</i> |
| Undergraduate Student Paper Award at KSC 2014 | <i>Jun. 2014</i> |
| SNU BK21 Scholarship | <i>Mar. 2019 - Aug. 2020</i> |
| Lecture & Research Scholarship by SNU | <i>Mar. 2016 - Feb. 2019</i> |
| National Scholarship For Science and Engineering by KOSAF | <i>Mar. 2013 - Jun. 2015</i> |

PARTICIPATED PROJECTS

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

INVITED TALKS

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| KAIST School of Electrical Engineering | <i>Feb. 2022</i> |
| LG AI Research Tech Talk | <i>Feb. 2022</i> |
| KAIST AI Student Colloquium | <i>Oct. 2021</i> |
| SNU AI Summer School 2021 | <i>Aug. 2021</i> |
| SNU AI Institute (AIIS) Retreat 2021 | <i>Apr. 2021</i> |
| NAVER Online Tech Talk | <i>Dec. 2020</i> |
| SNU AI Summer School 2020 | <i>Aug. 2020</i> |
| SNU Hospital | <i>Jul. 2020</i> |
| SNU AI Institute (AIIS) Retreat 2020 | <i>Jun. 2020</i> |
| Kakao Enterprise | <i>Jan. 2020</i> |
| Korea Software Congress 2019 | <i>Dec. 2019</i> |
| Introduction to Data Mining @ SNU CSE | <i>Jul. 2019</i> |
| Samsung Electronics | <i>Mar. 2019</i> |
| Istituto Dalle Molle di Studi sull'Intelligenza Artificiale (IDSIA) | <i>Jul. 2018</i> |
| Korea Software Congress 2017 | <i>Dec. 2017</i> |

PROFESIONAL SERVICES

PC Member

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

Journal Reviewer

- Pattern Recognition *2021*

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)