GEON LEE

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Homepage: http://geonlee0325.github.io

RESEARCH INTERESTS

Data Mining, Graph Mining, Machine Learning, Deep Learning, Social Network Analysis

EDUCATION

Korea Advanced Institute of Science and Technology (KAIST)   Seoul, South Korea
M.S. & Ph.D. in Artificial Intelligence   Sep. 2020 –
Advisor: Kijung Shin

Sungkyunkwan University (SKKU)   Suwon, South Korea
B.S. in Computer Science and Engineering   Mar. 2016 – Aug. 2019
GPA: 4.41/4.50; C.S.: 4.45/4.50 (Ranked 1st in the College of CSE)

WORK EXPERIENCE

NEC Labs America   Princeton, NJ, USA
Research Intern   May 2023 – Aug. 2023
Mentor: Wenchao Yu / Manager: Haifeng Chen

Amazon   San Francisco, CA, USA
Applied Scientist Intern   Sep. 2022 – Dec. 2022
Mentor: Zhonghao Luo / Manager: Tao Ye

AWARDS AND HONORS

Selected as One of the **Best-Ranked Papers of ICDM 2021**   Dec. 2021
Sungkyunkwan Presidential Award   Aug. 2019
Dean's List   2016 – 2019
Sungkyunkwan Software Scholarship (Full tuition scholarship)   2016 – 2019

TUTORIALS

[1] Mining of Real-World Hypergraphs: Patterns, Tools, and Generators
<u>Geon Lee</u>, Jaemin Yoo, and Kijung Shin
KDD 2023 & **WWW 2023** & **ICDM 2022** & **CIKM 2022**

PUBLICATIONS

[1] Representative and Back-in-Time Sampling from Real-world Hypergraphs
Minyoung Choe, Jaemin Yoo, <u>Geon Lee</u>, Woonsung Baek, U Kang, and Kijung Shin
Transaction on Knowledge Discovery from Data (SCIE Journal, 2024)

[2] VilLain: Self-Supervised Learning on Homogeneous Hypergraphs without Features
via Virtual Label Propagation
<u>Geon Lee</u>, Soo Yong Lee, and Kijung Shin
WWW 2024

[3] Hypergraph Motifs and Their Extensions Beyond Binary
<u>Geon Lee</u>*, Seokbum Yoon*, Jihoon Ko, Hyunju Kim, and Kijung Shin (* equal contribution)
The VLDB Journal (SCI Journal, 2023)

[4] Random Walk with Restart on Hypergraphs:
Fast Computation and an Application to Anomaly Detection
Jaewan Chun, <u>Geon Lee</u>, Kijung Shin, and Jinhong Jung
Data Mining and Knowledge Discovery (SCI Journal, 2023)

[5] Hypercore Decomposition for Non-Fragile Hyperedges:
Concepts, Algorithms, Observations, and Applications
Fanchen Bu, <u>Geon Lee</u>, and Kijung Shin
Data Mining and Knowledge Discovery (SCI Journal, 2023)

[6] Temporal Hypergraph Motifs
<u>Geon Lee</u> and Kijung Shin
Knowledge and Information Systems (SCIE Journal, 2023)

[7] Set2Box: Similarity Preserving Representation Learning for Sets
<u>Geon Lee</u>, Chanyoung Park, and Kijung Shin
ICDM 2022

[8] HashNWalk: Hash and Random Walk Based Anomaly Detection in Hyperedge Streams
<u>Geon Lee</u>, Minyoung Choe, and Kijung Shin
IJCAI 2022

[9] MiDaS: Representative Sampling from Real-World Hypergraphs
Minyoung Choe, Jaemin Yoo, <u>Geon Lee</u>, Woonsung Baek, U Kang, and Kijung Shin
WWW 2022

[10] Simple Epidemic Models with Segmentation Can Be Better than Complex Ones
<u>Geon Lee</u>, Se-eun Yoon, and Kijung Shin
PLOS ONE (SCIE Journal, 2022)
*Oral presentation at **epiDAMIK workshop in KDD 2021***

[11] THyMe+: Temporal Hypergraph Motifs and Fast Algorithms for Exact Counting
<u>Geon Lee</u> and Kijung Shin
ICDM 2021
*Selected as One of the **Best-Ranked Papers of ICDM 2021***

[12] How Do Hyperedges Overlap in Real-World Hypergraphs? - Patterns, Measures, and Generators
<u>Geon Lee</u>*, Minyoung Choe*, and Kijung Shin (* equal contribution)
WWW 2021

[13] Hypergraph Motifs: Concepts, Algorithms, and Discoveries
<u>Geon Lee</u>, Jihoon Ko, and Kijung Shin
VLDB 2020

[14] MEGA: Multi-View Semi-Supervised Clustering of Hypergraphs
Joyce Jiyoung Whang, Rundong Du, Sangwon Jung, <u>Geon Lee</u>, Barry Drake, Qingqing Liu, Seonggoo Kang, and Haesun Park
VLDB 2020

[15] Hyperlink Classification via Structured Graph Embedding
<u>Geon Lee</u>, Seonggoo Kang, and Joyce Jiyoung Whang
SIGIR 2019 (Short Paper)

ACADEMIC SERVICES

Program Committee

- SIAM International Conference on Data Mining (**SDM**)   2024

- AAAI Conference on Artificial Intelligence (**AAAI**) — 2024
- Learning on Graphs Conference (**LoG**) — 2022 - 2023

Program Committee (Tutorial Track)

- ACM International Conference on Information and Knowledge Management (**CIKM**) — 2023

Conference Reviewer

- The Web Conference (**WWW**) — 2024
- ACM Conference on Knowledge Discovery and Data Mining (**KDD**) — 2023 - 2024

Journal Reviewer

- Big Data Research — 2024
- The VLDB Journal — 2023
- IEEE Transactions on Knowledge and Data Engineering (**TKDE**) — 2023
- IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**) — 2023

PROJECTS

AI-based Weather Forecast Support Development	July 2021 –
COVID-19 Task Force	Mar. 2020 – Sep. 2020

TEACHING

Teaching Assistant

- KAIST AI506 Data Mining and Search — Spring 2021, 2023
- KAIST AI607 Graph Mining and Social Network Analysis — Fall 2020, 2021, 2022, 2023
- KAIST AI617 Machine Learning for Robotics — Spring 2022
- SKKU CSE3036 Seminar in Computer Engineering — Fall 2019