

# GEON LEE

Email: geonlee0325@kaist.ac.kr

Homepage: <http://geonlee0325.github.io>

## RESEARCH INTERESTS

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

## EDUCATION

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**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 Computer Science and Engineering)

## WORK EXPERIENCE

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**Amazon** San Francisco, CA, USA  
Applied Scientist Intern Sep. 2022 – Dec. 2022 (Expected)  
Manager: Tao Ye

## AWARDS AND HONORS

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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

## PUBLICATIONS

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- [1] Mining of Real-World Hypergraphs: Patterns, Tools, and Generators  
Geon Lee, Jaemin Yoo, and Kijung Shin  
**ICDM 2022, CIKM 2022, DSAA 2022** (Tutorial)
- [2] Set2Box: Similarity Preserving Representation Learning for Sets  
Geon Lee, Chanyoung Park, and Kijung Shin  
**ICDM 2022** (Acceptance Rate = 20%)
- [3] HashNWalk: Hash and Random Walk Based Anomaly Detection in Hyperedge Streams  
Geon Lee, Minyoung Choe, and Kijung Shin  
**IJCAI 2022** (Acceptance Rate = 15%)
- [4] MiDaS: Representative Sampling from Real-World Hypergraphs  
Minyoung Choe, Jaemin Yoo, Geon Lee, Woonsung Baek, U Kang, and Kijung Shin  
**WWW 2022** (Acceptance Rate = 17.7%)
- [5] Simple Epidemic Models with Segmentation Can Be Better than Complex Ones  
Geon Lee, Se-eun Yoon, and Kijung Shin  
**PLOS ONE** (SCIE Journal, 2022)  
*Oral presentation at **epiDAMIK workshop in KDD 2021***

- [6] THyMe+: Temporal Hypergraph Motifs and Fast Algorithms for Exact Counting  
Geon Lee and Kijung Shin  
**ICDM 2021** (Regular Paper, Acceptance Rate = 9.9%)  
*Selected as One of the **Best-Ranked Papers of ICDM 2021***
- [7] How Do Hyperedges Overlap in Real-World Hypergraphs? - Patterns, Measures, and Generators  
Geon Lee\*, Minyoung Choe\*, and Kijung Shin  
**WWW 2021** (Acceptance Rate = 20.6%)
- [8] Hypergraph Motifs: Concepts, Algorithms, and Discoveries  
Geon Lee, Jihoon Ko, and Kijung Shin  
**VLDB 2020** (Avg. Acceptance Rate = 16.7%)
- [9] MEGA: Multi-View Semi-Supervised Clustering of Hypergraphs  
 Joyce Jiyoung Whang, Rundong Du, Sangwon Jung, Geon Lee, Barry Drake, Qingqing Liu, Seonggoo Kang, and Haesun Park  
**VLDB 2020** (Avg. Acceptance Rate = 16.7%)
- [10] Hyperlink Classification via Structured Graph Embedding  
Geon Lee, Seonggoo Kang, and Joyce Jiyoung Whang  
**SIGIR 2019** (Short Paper, Acceptance Rate = 24.4%)

## PROJECTS

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### AI-based Weather Forecast Support Development

July 2021 –

- Developing a search engine that finds similar satellite images from the past 40 years, given a query image. The final goal is to support the weather forecasters in Korea Meteorological Administration (KMA) to properly refer to the past situation that is the most similar to the current one and thus accurately predict the future weather of the Korean Peninsula.

### COVID-19 Task Force

Mar. 2020 – Sep. 2020

- Developed a model for fitting and predicting epidemic events of COVID-19. Proposed an algorithm based on the Minimum Description Length (MDL) principle that properly divides an epidemic event sequences and demonstrated that simple models with segmentation can be better than using a single complex model. This work was published in PLOS ONE (SCIE journal) “Simple Epidemic Models with Segmentation Can Be Better than Complex Ones” and presented in epiDAMIKS workshop at KDD 2021.

## SKILLS

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<b>Languages</b>	Korean (mother tongue), English (fluent), Japanese (fluent)
<b>Computing Skills</b>	C, C++, Python, Matlab, Java, Android

## TEACHING

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### Teaching Assistant

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

### Mentoring

- Python Mentoring Program at Homaesil High School 2018
- C Mentoring Program at Suwon Foreign Language High School 2016