

# Taehyung Kwon

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[https://scholar.google.co.kr/citations?user=Ld\\_e3xIAAAAJ](https://scholar.google.co.kr/citations?user=Ld_e3xIAAAAJ)

## Research Interests

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Tensor Decomposition, Data Compression, Data Distillation

## Education

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### KAIST

Ph.D. in Artificial Intelligence

KAIST Data Mining Lab, Advisor: Kijung Shin

Seoul, South Korea

Mar. 2022 - Feb. 2026

### KAIST

M.S. in Artificial Intelligence

KAIST Data Mining Lab, Advisor: Kijung Shin

Seoul, South Korea

Mar. 2020 - Feb. 2022

### KAIST

B.S. in School of Computing

GPA: 4.0/4.3, Major GPA: 4.0/4.3, **Summa Cum Laude**

Daejeon, South Korea

Mar. 2015 - Feb. 2020

## Publications

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- [1] **Effective Dataset Distillation for Spatio-Temporal Forecasting with Bi-dimensional Compression (to appear)**  
Taehyung Kwon\*, Yeonje Choi\*, Yeongho Kim, and Kijung Shin  
IEEE ICDE 26.
- [2] **Effective and Lightweight Lossy Compression of Tensors: Techniques and Applications**  
Jihoon Ko, Taehyung Kwon, Jinhong Jung, and Kijung Shin  
Knowledge and Information Systems (SCIE Journal, 2025). [\[Link\]](#)
- [3] **Simple yet Effective Node Property Prediction on Edge Streams under Distribution Shifts (to appear)**  
Jongha Lee, Taehyung Kwon, Heechan Moon, and Kijung Shin  
IEEE ICDE 25. [\[Link\]](#)
- [4] **Kronecker Generative Models for Power-Law Patterns in Real-World Hypergraphs**  
Minyoung Choe, Jihoon Ko, Taehyung Kwon, Kijung Shin, and Christos Faloutsos  
ACM WWW 25. [\[Link\]](#)
- [5] **Begin: Extensive Benchmark Scenarios and an Easy-to-use Framework for Graph Continual Learning**  
Jihoon Ko\*, Shinhwan Kang\*, Taehyung Kwon, Heechan Moon, and Kijung Shin  
ACM TIST (SCIE Journal, 2024). [\[Link\]](#)
- [6] **Compact Lossy Compression of Tensors via Neural Tensor-Train Decomposition**  
Taehyung Kwon, Jihoon Ko, Jinhong Jung, Jun-Gi Jang, and Kijung Shin.  
Knowledge and Information Systems (SCIE Journal, 2024). [\[Link\]](#)
- [7] **ELiCiT: Effective and Lightweight Lossy Compression of Tensors**  
Jihoon Ko, Taehyung Kwon, Jinhong Jung, and Kijung Shin.  
IEEE ICDM 24. [\[Link\]](#)
- [8] **Compact Decomposition of Irregular Tensors for Data Compression: From Sparse to Dense to High-Order Tensors**  
Taehyung Kwon, Jihoon Ko, Jinhong Jung, Jun-Gi Jang, and Kijung Shin.  
ACM KDD 24. [\[Link\]](#)
- [9] **TensorCodec: Compact Lossy Compression of Tensors without Strong Data Assumptions**  
Taehyung Kwon, Jihoon Ko, Jinhong Jung, and Kijung Shin.  
IEEE ICDM 23. [\[Link\]](#) **Best Student Paper Runner-up Award**. [\[Link\]](#)
- [10] **NeuKron: Constant-Size Lossy Compression of Sparse Reorderable Matrices and Tensors**  
Taehyung Kwon\*, Jihoon Ko\*, Jinhong Jung, and Kijung Shin.  
ACM WWW 23. [\[Link\]](#)
- [11] **Finding a Concise, Precise, and Exhaustive Set of Near Bi-Cliques in Dynamic Graphs**  
Hyeonjeong Shin, Taehyung Kwon, Neil Shah, and Kijung Shin.  
ACM WSDM 22. [\[Link\]](#)

- [12] **Learning to Pool in Graph Neural Networks for Extrapolation**  
Jihoon Ko, **Taehyung Kwon**, Kijung Shin, and Juho Lee.  
*Preprint* (2021). [\[Link\]](#)
- [13] **Slicenstitch: Continuous CP Decomposition of Sparse Tensor Streams**  
**Taehyung Kwon\***, Inkyu Park\*, Dongjin Lee, and Kijung Shin.  
IEEE ICDE 21. [\[Link\]](#)

## Awards and Honors

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|------|-------------------------------------------------------|
| 2024 | <b>One of the Best-Ranked Papers</b> , ICDM 2024      |
| 2023 | <b>Best Student Paper Runner-up Award</b> , ICDM 2023 |
| 2023 | <b>One of the Best-Ranked Papers</b> , ICDM 2023      |

## Academic Services

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|-------------|--------------------------------------------------------------------------------|
| 2024 - 2026 | ACM Conference on Knowledge Discovery and Data Mining ( <b>KDD</b> ), reviewer |
| 2026        | The ACM Web Conference ( <b>WWW</b> ), reviewer                                |
| 2024        | Big Data Research, reviewer                                                    |
| 2024        | ACM Transactions on Knowledge Discovery from Data ( <b>TKDD</b> ), reviewer    |

## Projects

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### Development of the Platform for Safety from Disasters

*Ministry of Science and ICT, Korea*

Researcher

Dec. 2019 - Aug. 2022

- I developed the algorithm for removing anomalies and imputing missing values of sensor data in real time. The method is based on the online tensor decomposition algorithm.

### Robust, Fair, and Scalable Data-driven Continual Learning

*Ministry of Science and ICT, Korea*

Researcher

Sep. 2022 -

- I am developing a novel algorithm for graph condensation.

## TEACHING

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### Teaching Assistant

KAIST

- AI607 Graph Mining and Social Network Analysis
- AI506 Data Mining and Search

Fall 2020 - 2024

Spring 2020 - 2024