Taehyung Kwon

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https://scholar.google.co.kr/citations?user=Ld_e3xIAAAAJ&hl=en&oi=ao

Research Interests

Data Mining, Data Compression, Matrix and Tensor Decomposition

Education

KAIST *Seoul, South Korea*
Ph.D. in Artificial Intelligence Mar. 2022 -
KAIST Data Mining Lab, Advisor: Kijung Shin

KAIST *Seoul, South Korea*
M.S. in Artificial Intelligence Mar. 2020 - Feb. 2022
KAIST Data Mining Lab, Advisor: Kijung Shin

KAIST *Daejeon, South Korea*
B.S. in School of Computing Mar. 2015 - Feb. 2020
GPA: 4.0/4.3, Major GPA: 4.0/4.3, **Summa Cum Laude**

Publications

[1] **Compact Decomposition of Irregular Tensors for Data Compression: From Sparse to Dense to High-Order Tensors (to appear)**
Taehyung Kwon, Jihoon Ko, Jinhong Jung, Jun-Gi Jang, and Kijung Shin.
ACM KDD 24.

[2] **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]

[3] **NeuKron: Constant-Size Lossy Compression of Sparse Reorderable Matrices and Tensors**
Taehyung Kwon*, Jihoon Ko*, Jinhong Jung, and Kijung Shin.
ACM WWW 23. [Link]

[4] **Begin: Extensive Benchmark Scenarios and an Easy-to-use Framework for Graph Continual Learning**
Jihoon Ko*, Shinhwan Kang*, **Taehyung Kwon**, Heechan Moon, Kijung Shin
Preprint (2022). [Link]

[5] **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]

[6] **Learning to Pool in Graph Neural Networks for Extrapolation**
Jihoon Ko, **Taehyung Kwon**, Kijung Shin, and Juho Lee.
Preprint (2021). [Link]

[7] **Slicenstitch: Continuous CP Decomposition of Sparse Tensor Streams**
Taehyung Kwon*, Inkyu Park*, Dongjin Lee, and Kijung Shin.
IEEE ICDE 21. [Link]

Awards and Honors

2023 **IEEE ICDM Best Student Paper Runner-up Award**
2015 **Dean's List (KAIST)**

Academic Services

2024 - 2025 ACM Conference on Knowledge Discovery and Data Mining (**KDD**), reviewer
2024 Big Data Research, reviewer

Projects

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

Teaching Assistant

KAIST

- AI607 Graph Mining and Social Network Analysis Fall 2020, Fall 2021, Fall 2022, Fall 2023
- AI506 Data Mining and Search Spring 2020, Spring 2021, Spring 2022, Spring 2023, Spring 2024