JUN-GI JANG

CONTACT

Email: *elnino9158 (at) gmail.com*
Homepage: https://jungijang.github.io/

RESEARCH INTERESTS

Tensor Mining and Time Series Analysis

POSITIONS

Postdoctoral Researcher, UIUC — AUG. 2023 - PRESENT

WORK EXPERIENCE

Postdoctoral Researcher, SNU — MARCH 2023 - AUG. 2023

Research Intern, HYPERCONNECT — JUL. 2020 - AUG. 2020

EDUCATION

M.S/Ph.D Student — MAR. 2017 - FEB. 2023
Computer Science and Engineering
Seoul National University
Advisor: Prof. U Kang

Bachelor of Science — MAR. 2010 - FEB. 2017
Mechanical and Aerospace Engineering,
Computer Science and Engineering (double major)
Seoul National University

AWARD AND FELLOWSHIP

A7. **Outstanding Dissertation Award**, SNU CSE — FEB. 2023
A6. **Best Paper Awards, Honorable Mention**, ICDE — MAY 2022
A5. **SNU BK21 Star Researcher Award**, BK21 — FEB. 2022
A4. **BK21 Best Graduate Student Award**, BK21 — FEB. 2022
A3. **Best Paper Awards, 1st Place**, BigComp — JAN. 2021
A2. **Best Paper Awards, Best Research Paper**, KDD — AUG. 2021
A1. **Humantech Paper Award (Honorable Mention, lead-author)**, Samsung — FEB. 2018

F5. **Future Gauss Lecture Award**, Gauss Labs — FEB. 2022
F4. **Naver Ph.D. Fellowship Award**, Naver — DEC. 2021
F3. **Qualcomm Innovation Fellowship**, Qualcomm — NOV. 2021
F2. **Yulchon AI Star Fellowship**, Yulchon Foundation — SEP. 2021
F1. **Lecture/Research Scholarship**, Seoul National University — MAR. 2019 - AUG. 2021

PUBLICATIONS

Conferences

C8. **Jun-Gi Jang**, Jeongyoung Lee, Yong-chan Park, and U Kang, "Fast and Accurate Dual-Way Streaming PARAFAC2 for Irregular Tensors - Algorithm and Application", The 29th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), 2023, Long Beach, CA, USA (acceptance rate $313/1416 = 22.1\%$).

C7. **Jun-Gi Jang**, Jeongyoung Lee, Jiwon Park, and U Kang, "Accurate PARAFAC2 Decomposition for Temporal Irregular Tensors with Missing Values", IEEE International Conference on Big Data (BigData), 2022, Osaka, Japan (oral presentation, acceptance rate $122/633 = 19.2\%$).

C6. **Jun-Gi Jang** and U Kang, "DPar2: Fast and Scalable PARAFAC2 Decomposition for Irregular Dense Tensors", 38th IEEE International Conference on Data Engineering (ICDE) 2022, Virtual Event (oral presentation, acceptance rate $211/780 = 27.1\%$). **Best Paper Award, Honorable Mention.**

C5. **Jun-Gi Jang** and U Kang, "Fast and Memory-Efficient Tucker Decomposition for Answering Diverse Time Range Queries", The 27th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), 2021, Virtual Event (oral presentation, acceptance rate $238/1541 = 15.4\%$). **Best Paper Award, Best Research Paper.**

C4. Yong-chan Park, **Jun-Gi Jang**, and U Kang, "Fast and Accurate Partial Fourier Transform for Time Series Data", The 27th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), 2021, Virtual Event (oral presentation, acceptance rate $238/1541 = 15.4\%$).

C3. Moonjeong Park*, **Jun-Gi Jang***, and Lee Sael, "VEST: Very Sparse Tucker Factorization of Large-Scale Tensors", IEEE International Conference on Big Data and Smart Computing (BigComp), 2021, Online. (* equal contribution). **Best Paper Award, 1st Place.**

C2. **Jun-Gi Jang** and U Kang, "D-Tucker: Fast and Memory-Efficient Tucker Decomposition for Dense Tensors", 36th IEEE International Conference on Data Engineering (ICDE), 2020, Online (poster, acceptance rate $(129 + 55)/568 = 32\%$).

C1. **Jun-Gi Jang**, Donjin Choi, Jinhong Jung, and U Kang, "Zoom-SVD: Fast and Memory Efficient Method for Extracting Key Patterns in an Arbitrary Time Range", ACM International Conference on Information and Knowledge Management (CIKM), 2018, Lingotto, Turin, Italy (oral presentation, acceptance rate $147/826 = 17.8\%$).

Journals

J10. **Jun-Gi Jang**, Sooyeon Shim, Vladimir Egay, Jeeyong Lee, Jongmin Park, Suhyun Chae, and U Kang, "Accurate Open-set Recognition for Memory Workload", ACM Transactions on Knowledge Discovery from Data (TKDD), 2023.

J9. Sooyeon Shim, Doyeon Kim, **Jun-Gi Jang**, and U Kang, "Fast and accurate interpretation of workload classification model", PLOS ONE, March, 2023.

J8. Hyunsik Jeon, **Jun-Gi Jang**, Taehun Kim, and U Kang, "Accurate Bundle Matching and Generation via Multitask Learning with Partially Shared Parameters", PLOS ONE, March, 2023.

J7. **Jun-Gi Jang***, Chun Quan*, Hyun Dong Lee, and U Kang, "Falcon: Lightweight and Accurate Convolution Based on Depthwise Separable Convolution", Knowledge and Information Systems (KAIS), Jan., 2023. (* equal contribution)

J6. **Jun-Gi Jang** and U Kang, "Static and Streaming Tucker Decomposition for Dense Ten-

sors", ACM Transactions on Knowledge Discovery from Data (TKDD), Feb., 2023. It is the extended version of the conference paper C2.

J5. **Jun-Gi Jang***, Moonjeong Park*, Jongwuk Lee, and Lee Sael, "Large-scale tucker Tensor factorization for sparse and accurate decomposition", The Journal of Supercomputing, May, 2022. (* equal contribution). It is the extended version of the conference paper C3.

J4. **Jun-Gi Jang**, Chaeheum Park, Changwon Jang, Geonsoo Kim, and U Kang, "Finding Key Structures in MMORPG Graph with Hierarchical Graph Summarization", ACM Transactions on Knowledge Discovery from Data (TKDD), Feb., 2022.

J3. Dawon Ahn, **Jun-Gi Jang**, and U Kang, "Time-Aware Tensor Decomposition for Sparse Tensors", Machine Learning, Sep. 27, 2021.

J2. Dongjin Choi, **Jun-Gi Jang**, and U Kang, "S3CMTF: Fast, accurate, and scalable method for incomplete coupled matrix-tensor factorization", PLOS ONE, June 28, 2019.

J1. Sejoon Oh, Namyong Park, **Jun-Gi Jang**, Lee Sael, and U Kang, "High-Performance Tucker Factorization on Heterogeneous Platforms", IEEE Transactions on Parallel and Distributed Systems, Apr. 1, 2019.

PATENTS

United States

1. U Kang, Suhyun Chae, Jongmin Park, **Jun-Gi Jang**, Jeeyong Lee, Sooyeon Shim, and Vladimir Egay, MEMORY TEST DEVICE (filed on Apr. 2023).

Korea

9. U Kang, **Jun-Gi Jang**, Jeongyoung Lee, Yong-chan Park, Apparatus and Method for Decomposing Irregular Tensors (filed on July 2023).
8. U Kang, **Jun-Gi Jang**, Jeongyoung Lee, Jiwon Park, Method and Apparatus for Decomposition for Temporal Irregular Tensors with Missing Values (filed on Jan. 2023).
7. U Kang, and **Jun-Gi Jang**, Apparatus and Method for Tensor Analysis (filed on May 2022).
6. U Kang, and **Jun-Gi Jang**, Apparatus and Method for Tensor Analysis (filed on Jul. 2021).
5. U Kang, Yongchan Park, and **Jun-Gi Jang**, Fast Partial Fourier Transform Method and Computing Apparatus for Performing the Same (filed on Apr. 2021).
4. U Kang, Dawon Ahn, and **Jun-Gi Jang**, Method for Tensor Decomposition with Temporal Dependency and Apparatus Therefor (filed on Mar. 2021).
3. U Kang, and **Jun-Gi Jang**, Method for Decomposing Tensor and Apparatus for Performing the Same (filed on Sep. 2020).
2. U Kang, Donjing Choi, and **Jun-Gi Jang**, Data Analysis Method and Apparatus for Sparse Data (registered on Mar. 2020).
1. U Kang, **Jun-Gi Jang**, and Dongjin Choi, Apparatus and Method for Processing Data (registered on Jan. 2020).

INVITED TALKS

The Future of Data Workshop 2023, KCC DB Society — JUN. 2023

SNU AI Summer School 2022, SNU — AUG. 2022

	Korea Computer Congress 2022, KIISE	JUN. 2022
	AI Retreat, SNU AI Institute (AIIS)	APR. 2022
	EIRIC Seminar, EIRIC	MAR. 2022
	TechTalk, NAVER	FEB. 2022
	Future Gauss Lecture, Gauss Labs	FEB. 2022
	TechTalk, HYPERCONNECT	JAN. 2022
	Korea Software Congress 2021, KIISE	DEC. 2021
	AI Retreat, SNU AI Institute (AIIS)	NOV. 2021
	Regular Seminar, Qatar Computing Research Institute (QCRI)	SEP. 2021
	Korea Computer Congress 2020, KIISE	JUL. 2020
	NC AI DAY, NC Soft	JAN. 2019
	Korea Software Congress 2018, KIISE	DEC. 2018
	Samsung AI Forum, Samsung	SEP. 2018
TEACHING EXPERIENCE	**Lead T.A.**, M2177.004900 Theory and Lab of IoT, AI, and Big Data @ SNU	SPRING 2020
	T.A., M2177.004900 Theory and Lab of IoT, AI, and Big Data @ SNU	FALL 2019
	T.A., M2177.004900 Theory and Lab of IoT, AI, and Big Data @ SNU	SPRING 2019
	T.A., M1522.001400 Introduction to Data Mining @ SNU	SPRING 2018
	T.A., M1522.000900 Data Structure @ SNU	FALL 2017
PROFESSIONAL SERVICES	**PC Member**, AAAI	2024
	Reviewer, Machine Learning journal	2023
	PC Member, KDD	2023
	Reviewer, TPDS journal	2023
	Reviewer, DAMI journal	2023
	PC Member, BigComp	2021 - 2022
	External Reviewer, KDD	2019 - 2022
	External Reviewer, WWW	2019 - 2021
	External Reviewer, ICLR	2021
	External Reviewer, NeurIPS	2020 - 2022
	External Reviewer, CIKM	2018 - 2019
	External Reviewer, ICDM	2018
	External Reviewer, WSDM	2018