JUN-GI JANG

CONTACT

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EDUCATION

M.S/Ph.D Student — MAR. 2017 - PRESENT
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

RESEARCH INTERESTS

Tensor Analysis, Time Series Analysis

PUBLICATIONS

Conferences

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

J6. **Jun-Gi Jang** and U Kang, "Static and Streaming Tucker Decomposition for Dense Tensors", ACM Transactions on Knowledge Discovery from Data (TKDD), to appear. 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

Patents

P7. **Jun-Gi Jang** and U Kang, Apparatus and Method for Tensor Analysis (filed on May 2022).

P6. **Jun-Gi Jang** and U Kang, Apparatus and Method for Tensor Analysis (filed on Jul. 2021).

P5. Yongchan Park, **Jun-Gi Jang** and U Kang, Fast Partial Fourier Transform Method and Computing Apparatus for Performing the Same (filed on Apr. 2021).

P4. Dawon Ahn, **Jun-Gi Jang** and U Kang, Method for Tensor Decomposition with Temporal Dependency and Apparatus Therefor (filed on Mar. 2021).

P3. **Jun-Gi Jang** and U Kang, Method for Decomposing Tensor and Apparatus for Performing the Same (filed on Sep. 2020).

P2. Donjing Choi, **Jun-Gi Jang**, and U Kang, Data Analysis Method and Apparatus for Sparse Data (registered on Mar. 2020).

P1. **Jun-Gi Jang**, Dongjin Choi, and U Kang, Apparatus and Method for Processing Data (registered on Jan. 2020).

AWARD

Best Paper Award

A3. **Best Paper Awards, Honorable Mention**, ICDE — MAY 2022

A2. **Best Paper Awards, Best Research Paper**, KDD — AUG. 2021

A1. **Best Paper Awards, 1st Place**, BigComp — JAN. 2021

Fellowship

Fellowship

F8. **SNU BK21 Star Researcher Award**, BK21 — Feb. 2022

F7. **Future Gauss Lecture Award**, Gauss Labs — Feb. 2022

F6. **BK21 Best Graduate Student Award**, BK21 — Feb. 2022

F5. **Naver Ph.D. Fellowship Award**, Naver — Dec. 2021

F4. **Qualcomm Innovation Fellowship**, Qualcomm — Nov. 2021

F3. **Yulchon AI Star Fellowship**, Yulchon Foundation — Sep. 2021

F2. **Lecture/Research Scholarship**, Seoul National University — Mar. 2019 - Aug. 2021

F1. **Humantech Paper Award (Honorable Mention, lead-author)**, Samsung — Feb. 2018

Work Experience

Research Intern, HYPERCONNECT — Jul. 2020 - Aug. 2020

Invited Talks

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

In Seoul National University

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

In Other Organization

T.A., Hyundai AI Master @ Hyundai Motors — Aug. 2021, Oct. 2021, Jul. 2022

T.A., LG AI Education @ LG Chem — Jan. 2021, Dec. 2021

T.A., SK Univ @ SK Hynix — Sep. 2020 - Nov. 2020

	T.A., DS^2 (1st-7th) @ Samsung Electronics	APR. 2018 - JUN. 2021
PROFESSIONAL SERVICES	**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
PROJECTS	Samsung Electronics, New Workload Detection	MAR. 2021 - DEC. 2021
	Star Lab, Flexible and Efficient Model Compression Method for Various Applications and Environments	APR. 2020 - FEB. 2020
	NC soft, Heterogeneous Graph Summarization for MMORPG Data	MAY 2019 - MAR. 2020
	NC soft, News map generation in News Articles	MAY 2018 - FEB. 2019
	NC soft, High-quality Triple Clustering in News Article	MAY 2017 - MAR. 2018
	HPC, Tensor library based on High Performance Computing	NOV. 2016 - MAR. 2019
GRADUATE COURSEWORK	M2177.003000 Advanced Data Mining @ SNU	FALL 2019
	4190.676 Artificial Neural Networks @ SNU	FALL 2019
	3394.506 Advanced Numerical Linear Algebra @ SNU	SPRING 2019
	M1522.002500 Quantum Computing and Information Fundamentals @ SNU	SPRING 2019
	430.502 Industrial Applications of Electrical and Electronic Technologies @ SNU	FALL 2018
	430.709A Convex Optimization @ SNU	FALL 2018
	4190.771 Topics in Algorithms (ML algorithms in bioinformatics) @ SNU	FALL 2018
	430.707A Pattern Recognition @ SNU	SPRING 2018
	4190.771 Topics in Algorithms (Compression) @ SNU	SPRING 2018
	M1522.001600 Topics in Big data Analytics @ SNU	FALL 2017
	M1522.000500 Information Visualization and Visual Analytics @ SNU	FALL 2017
	430.707A Advance Databases @ SNU	SPRING 2017
	M1522.001600 Topics in Big data Analytics @ SNU	SPRING 2017