

# JUN-GI JANG

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CONTACT	Data Mining Laboratory Building 301 #551-1 Seoul National University 1, Gwanak-ro, Gwanak-gu, Seoul Republic of Korea 08826	Phone: +82-2-880-7263 Email: <i>elnino4 (at) snu.ac.kr</i> Homepage: <a href="https://jungijang.github.io/">https://jungijang.github.io/</a>
EDUCATION	<b>M.S/Ph.D Student</b> Computer Science and Engineering Seoul National University <i>Advisor:</i> Prof. U Kang  <b>Bachelor of Science</b> Mechanical and Aerospace Engineering, Computer Science and Engineering (double major) Seoul National University	MAR. 2017 - PRESENT      MAR. 2010 - FEB. 2017
RESEARCH INTERESTS	<b>Tensor Analysis, Time Series Analysis</b>	
PUBLICATIONS	<b>Conferences</b> C7. <b>Jun-Gi Jang</b> , Jeongyoung Lee, Jiwon Park, and U Kang, “Accurate PARAFAC2 Decomposition for Temporal Irregular Tensors with Missing Values”, IEEE International Conference on Big Data, 2022, Osaka, Japan (oral presentation, acceptance rate $122/633 = 19.2\%$ ). C6. <b>Jun-Gi Jang</b> 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 $211/780 = 27.1\%$ ). <b>Best Paper Award, Honorable Mention.</b> C5. <b>Jun-Gi Jang</b> 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 $238/1541 = 15.4\%$ ). <b>Best Paper Award, Best Research Paper.</b> C4. Yong-chan Park, <b>Jun-Gi Jang</b> , 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*, <b>Jun-Gi Jang</b> *, 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). <b>Best Paper Award, 1st Place.</b> C2. <b>Jun-Gi Jang</b> 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

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| A3. <b>Best Paper Awards, Honorable Mention, ICDE</b>  | MAY 2022  |
| A2. <b>Best Paper Awards, Best Research Paper, KDD</b> | AUG. 2021 |
| A1. <b>Best Paper Awards, 1st Place, BigComp</b>       | 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

<b>Research Intern, HYPERCONNECT</b>	JUL. 2020 - AUG. 2020
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## INVITED TALKS

<b>SNU AI Summer School 2022, SNU</b>	AUG. 2022
<b>Korea Computer Congress 2022, KIISE</b>	JUN. 2022
<b>AI Retreat, SNU AI Institute (AIIS)</b>	APR. 2022
<b>EIRIC Seminar, EIRIC</b>	MAR. 2022
<b>TechTalk, NAVER</b>	FEB. 2022
<b>Future Gauss Lecture, Gauss Labs</b>	FEB. 2022
<b>TechTalk, HYPERCONNECT</b>	JAN. 2022
<b>Korea Software Congress 2021, KIISE</b>	DEC. 2021
<b>AI Retreat, SNU AI Institute (AIIS)</b>	NOV. 2021
<b>Regular Seminar, Qatar Computing Research Institute (QCRI)</b>	SEP. 2021
<b>Korea Computer Congress 2020, KIISE</b>	JUL. 2020
<b>NC AI DAY, NC Soft</b>	JAN. 2019
<b>Korea Software Congress 2018, KIISE</b>	DEC. 2018
<b>Samsung AI Forum, Samsung</b>	SEP. 2018

TEACHING  
EXPERIENCE**In Seoul National University**

<b>Lead T.A., M2177.004900 Theory and Lab of IoT, AI, and Big Data @ SNU</b>	SPRING 2020
<b>T.A., M2177.004900 Theory and Lab of IoT, AI, and Big Data @ SNU</b>	FALL 2019
<b>T.A., M2177.004900 Theory and Lab of IoT, AI, and Big Data @ SNU</b>	SPRING 2019
<b>T.A., M1522.001400 Introduction to Data Mining @ SNU</b>	SPRING 2018
<b>T.A., M1522.000900 Data Structure @ SNU</b>	FALL 2017

**In Other Organization**

<b>T.A., Hyundai AI Master @ Hyundai Motors</b>	AUG. 2021, OCT. 2021, JUL. 2022
<b>T.A., LG AI Education @ LG Chem</b>	JAN. 2021, DEC. 2021
<b>T.A., SK Univ @ SK Hynix</b>	SEP. 2020 - NOV. 2020

	<b>T.A., DS<sup>2</sup> (1st-7th) @ Samsung Electronics</b>	<b>APR. 2018 - JUN. 2021</b>
<b>PROFESSIONAL SERVICES</b>	<b>PC Member, BigComp</b>	<b>2021 - 2022</b>
	<b>External Reviewer, KDD</b>	<b>2019 - 2022</b>
	<b>External Reviewer, WWW</b>	<b>2019 - 2021</b>
	<b>External Reviewer, ICLR</b>	<b>2021</b>
	<b>External Reviewer, NeurIPS</b>	<b>2020 - 2022</b>
	<b>External Reviewer, CIKM</b>	<b>2018 - 2019</b>
	<b>External Reviewer, ICDM</b>	<b>2018</b>
	<b>External Reviewer, WSDM</b>	<b>2018</b>
<b>PROJECTS</b>	<b>Samsung Electronics, New Workload Detection</b>	<b>MAR. 2021 - DEC. 2021</b>
	<b>Star Lab, Flexible and Efficient Model Compression Method for Various Applications and Environments</b>	<b>APR. 2020 - FEB. 2020</b>
	<b>NC soft, Heterogeneous Graph Summarization for MMORPG Data</b>	<b>MAY 2019 - MAR. 2020</b>
	<b>NC soft, News map generation in News Articles</b>	<b>MAY 2018 - FEB. 2019</b>
	<b>NC soft, High-quality Triple Clustering in News Article</b>	<b>MAY 2017 - MAR. 2018</b>
	<b>HPC, Tensor library based on High Performance Computing</b>	<b>NOV. 2016 - MAR. 2019</b>
<b>GRADUATE COURSEWORK</b>	<b>M2177.003000 Advanced Data Mining @ SNU</b>	<b>FALL 2019</b>
	<b>4190.676 Artificial Neural Networks @ SNU</b>	<b>FALL 2019</b>
	<b>3394.506 Advanced Numerical Linear Algebra @ SNU</b>	<b>SPRING 2019</b>
	<b>M1522.002500 Quantum Computing and Information Fundamentals @ SNU</b>	<b>SPRING 2019</b>
	<b>430.502 Industrial Applications of Electrical and Electronic Technologies @ SNU</b>	<b>FALL 2018</b>
	<b>430.709A Convex Optimization @ SNU</b>	<b>FALL 2018</b>
	<b>4190.771 Topics in Algorithms (ML algorithms in bioinformatics) @ SNU</b>	<b>FALL 2018</b>
	<b>430.707A Pattern Recognition @ SNU</b>	<b>SPRING 2018</b>
	<b>4190.771 Topics in Algorithms (Compression) @ SNU</b>	<b>SPRING 2018</b>
	<b>M1522.001600 Topics in Big data Analytics @ SNU</b>	<b>FALL 2017</b>
	<b>M1522.000500 Information Visualization and Visual Analytics @ SNU</b>	<b>FALL 2017</b>
	<b>430.707A Advance Databases @ SNU</b>	<b>SPRING 2017</b>
	<b>M1522.001600 Topics in Big data Analytics @ SNU</b>	<b>SPRING 2017</b>