Dawon Ahn

Ph.D. Candidate · Computer Science and Engineering
University of California, Riverside
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Research interests: Tensor methods; interpretable and parsimonious representation learning; model compression; neural operators for computational fluid dynamics.

Experience

NVIDIA · LPR: AI-Aided Engineering — Santa Clara, CA, USA
Research Intern · Mentor: Jean Kossaifi — 2026 Feb - 2026 Sep

- Contributed experiments for AI surrogate models for computational fluid dynamics [Project, Paper].

Visa · GenAI Visa Research — Foster City, CA, USA
Research Intern · Mentors: Uday Singh Saini, Chin-Chia Michael Yeh — 2025 Jun - 2025 Sep

- Investigated transformer scaling with fine-grained mixture-of-experts (MoE) architectures through experiments on graph reasoning and in-context learning tasks, and applied these architectures to internal models.

Cisco · Cisco Research — San Jose, CA, USA
Research Intern · Mentor: Ali Payani — 2023 Jun - 2023 Sep

- Developed a neural tensor model combining the interpretability of classical tensor decompositions with the expressiveness of neural networks [Published at CIKM 2024].

University of California, Riverside · Multi-Aspect Data Lab — Riverside, CA, USA
Graduate Research Assistant · Advisor: Prof. Evangelos E. Papalexakis — 2021 Sep - 2026 Dec (expected)

- Developed interpretable tensor methods for multi-aspect data.
- Designed tensorized neural networks.

Seoul National University · Data Mining Lab — Seoul, South Korea
Research Intern & Assistant · Advisor: Prof. U Kang — 2019 Jan - 2021 Jun

- Developed time-aware tensor methods for online and streaming multi-aspect data.
- Developed Gtensor, a GPU-based library for large-scale tensor analysis.

Education

University of California, Riverside — Riverside, CA, USA
Ph.D. in Computer Science and Engineering · Expected Dec 2026 — 2021 Sep - 2026 Dec

Chonnam National University — Gwangju, South Korea
B.S. in Mathematics — 2014 Mar - 2019 Jun

Awards

Female Student Award in Big Data · IEEE Big Data — 2026
Rising Stars in Computational & Data Sciences Workshop · Santa Fe Institute — 2026
Dissertation Completion Fellowship Award (DCFA) · UC Riverside — 2026
Honorable Mention · SDM Ph.D. Forum — 2025
Laxmi Bhuyan Fellowship · UC Riverside CSE — 2025

Best Short Paper Presentation Award · IEEE Big Data Ph.D. Forum 2024

Student Travel Awards · KDD (2026), PAKDD (2025), SDM (2025)

Academic Service

Organizer

TensorKDD Workshop · KDD (2026)

Program Committee

TheWebConf (2025); CIKM, Short Track (2025, 2026)

Reviewer

TheWebConf (2023–2026); KDD (2023–2026, including AI4SC Track in 2026); CIKM (2023–2025); JMLR (2026); TKDD (2025); Machine Learning (2025); Pattern Recognition (2025); ML4PS Workshop (2026)

Mentoring

Mentor · NSF Research Experiences for Undergraduates (REU), UC Riverside 2024 Jun - 2024 Sep

Team Lead · Lawrence Livermore National Laboratory (LLNL) Data Science Challenge 2022

Publications

Preprints

[1] **CAD-Native Transformer Operators for AI-Aided Engineering**
Daniel Leibovici, Nikola Borislavov Kovachki, Dawon Ahn, Ruben Ohana, Ira JS Shokar, Abouzar Ghasemi, Semih Akkurt, Rishikesh Ranade, Neil Ashton, Jan Kautz, Jean Kossaifi
arXiv preprint arXiv:2609.36806, 2026

Conference & Journal Publications

[2] **Transforming Behavioral Neuroscience Discovery with In-Context Learning and AI-Enhanced Tensor Methods**
Paimon Goulart, Jordan Steinhauser, Dawon Ahn, Kylene Shuler, Edward Korzus, Jia Chen, Evangelos E. Papalexakis
IEEE International Conference on Big Data (Big Data), 12th Special Session on Intelligent Data Mining, 2026, Phoenix, AZ, USA

[3] **AnTenA: Actionable and Explainable Tensor Analysis System with Large Language Models**
Dawon Ahn, Evangelos E. Papalexakis, Audrey Der
Joint European Conference on Machine Learning and Knowledge Discovery in Databases (ECML PKDD), Demo Track, 2026, Naples, Italy

[4] **Multi-view Graph Condensation via Tensor Decomposition**
Nícolas Santos, Dawon Ahn, Diego Minatel, Alneu Lopes, Evangelos E. Papalexakis
The 19th ACM International Conference on Web Search and Data Mining (WSDM), 2026, Boise, ID, USA
Presented at NeurIPS NPGML Workshop, 2025

[5] **Improving Group Fairness in Tensor Completion via Imbalance Mitigating Entity Augmentation**
Dawon Ahn*, Jun-Gi Jang*, Evangelos E. Papalexakis
Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD), 2025, Sydney, Australia (*Equal contribution)

[6] **TRAWL: Tensor Reduced and Approximated Weights for Large Language Models**
Yiran Luo, Het Patel, Yu Fu, Dawon Ahn, Jia Chen, Yue Dong, Evangelos E. Papalexakis
Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD-DSFA), 2025, Sydney, Australia

[7] **Automating Data Science Pipelines with Tensor Completion**
Shaan Pakala, Bryce Graw, Dawon Ahn, Tam Dinh, Mehnaz Tabassum Mahin, Vassilis Tsotras, Jia Chen, Evangelos E. Papalexakis
IEEE International Conference on Big Data (Big Data), 2024, Washington DC, USA

[8] **Neural Additive Tensor Decomposition for Sparse Tensors**
Dawon Ahn, Uday Singh Saini, Evangelos E. Papalexakis, Ali Payani
ACM International Conference on Information and Knowledge Management (CIKM), 2024, Boise, ID, USA

[9] **Compact Interpretable Tensor Graph Multi-Modal News Embeddings**
Dawon Ahn, William Shiao, Arindam Khaled, Andrew Bauer, Stefanos Poulis, Evangelos E. Papalexakis
ACM on Web Conference (TheWebConf), 2024, Singapore
Presented at KDD MLG Workshop, 2023

[10] **Time-aware tensor decomposition for sparse tensors**
Dawon Ahn, Jun-Gi Jang, U Kang
IEEE International Conference on Data Science and Advanced Analytics (DSAA), 2021, Porto, Portugal

[11] **Accurate online tensor factorization for temporal tensor streams with missing values**
Dawon Ahn, Seyun Kim, U Kang
ACM International Conference on Information & Knowledge Management (CIKM), Short Track, 2021, Gold Coast, Queensland, Australia

[12] **Gtensor: Fast and accurate tensor analysis system using GPUs**
Dawon Ahn, Sangjun Son, U Kang
ACM International Conference on Information & Knowledge Management (CIKM), Demo Track, 2020, Ireland

Workshop & Forum

[13] **Interplay Between Classical Tensor Methods And Foundation Models**
Dawon Ahn, Yong-chan Park, Taehyung Kwon, Jun-Gi Jang, Kijung Shin, U Kang, Evangelos E. Papalexakis
Proceedings of the 32nd ACM SIGKDD Conference on Knowledge Discovery and Data Mining V. 2 (Workshop proceedings), 2026, Jeju, Korea

[14] **Lightweight Fourier Neural Operators for Time-Dependent PDEs**
Dawon Ahn, Satish Chandran, Daniel Leibovici, Nikola B. Kovachki, Evangelos E. Papalexakis, Jean Kossaifi
Advances in Neural Information Processing Systems Workshop on Machine Learning and the Physical Sciences (NeurIPS-ML4PS), 2025, San Diego, CA, USA

[15] **Enhancing Trustworthiness and Expressiveness in Tensor Mining**
Dawon Ahn, Evangelos E. Papalexakis
SIAM International Conference on Data Mining (SDM), Ph.D. Forum, 2025, Alexandria, VA, USA, Honorable Mention

[16] **Tensor Completion for Surrogate Modeling of Material Property Prediction**
Shaan Pakala, Dawon Ahn, Evangelos E. Papalexakis
AAAI Conference on Artificial Intelligence, KGML-Bridge-AAAI Workshop, 2025, Philadelphia, PA, USA

[17] **Global and Local Structure Learning for Sparse Tensor Completion**
Dawon Ahn, Evangelos E. Papalexakis
IEEE International Conference on Big Data (Big Data), Ph.D. Forum, 2024, Washington DC, USA, Best Short Paper Presentation Award