Shaan Pakala

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Google Scholar, LinkedIn & GitHub

About

I am a 1^{st} year Computer Science Ph.D. student at the University of California, Riverside, where I work on machine learning research problems with Professor Vagelis Papalexakis. Generally, I am interested in developing machine learning methods for interdisciplinary scientific applications in domains such as material design, physics, and healthcare. The majority of my work involves learning from multidimensional data through the use of tensor decomposition. I have also interned and collaborated with scientists at Lawrence Livermore National Laboratory.

Education

University of California, Riverside Sept. 2025 - Present
Ph.D in Computer Science

· Advisor: Prof. Vagelis Papalexakis

University of California, Riverside Sept. 2021 - June 2025
B.S in Data Science & Engineering

· 3.9 upper division GPA

Research Experience

University of California, Riverside June 2025 - Present
Graduate Student Researcher

· Research on AI4Science problems (e.g. material science) with Prof. Papalexakis [2] [3] [4]

Lawrence Livermore National Laboratory June 2025 - Present
Research Intern

· Intern/collaborator in the predictive healthcare group with Dr. Priyadip Ray & Dr. Braden Soper

University of California, Riverside June 2024 - June 2025
Undergraduate Researcher

· Worked on machine learning surrogate modeling for hyperparameter tuning, neural architecture search, and SQL query cardinality estimation with Professors Papalexakis, Tsotras, and Chen [1]

University of California, Riverside March 2024 - Dec. 2024
Undergraduate Researcher

· Machine learning for bioinformatics (analyzing protein sequences with LLMs) with Prof. Lonardi

Papers

Main Conference

[1] **Automating Data Science Pipelines with Tensor Completion** 2024
Shaan Pakala, B. Graw, D. Ahn, T. Dinh, M.T. Mahin, V. Tsotras, J. Chen, and E.E. Papalexakis
IEEE International Conference on Big Data 2024 [Link] [PDF] [Code]
BigData Student Travel Award

Workshop

[2] **Surrogate Modeling for the Design of Optimal Lattice Structures using Tensor Completion** 2025
Shaan Pakala, A.E. Gongora, B. Giera, and E.E. Papalexakis
NeurIPS AI for Accelerated Material Discovery Workshop 2025 [PDF] [Code]
NeurIPS AI4Mat Travel Award

[3] **Efficiently Generating Multidimensional Calorimeter Data with Tensor Decomposition Parameterization** 2025
P. Goulart*, Shaan Pakala*, and E.E. Papalexakis
ICCV Representation Learning with Very Limited Resources Workshop 2025 [PDF] [Code]

[4] **Tensor Completion for Surrogate Modeling of Material Property Prediction** 2025
Shaan Pakala, D. Ahn, and E.E. Papalexakis
AAAI Bridge on Knowledge-Guided Machine Learning 2025 [PDF]

** denotes equal contribution*

Awards

Travel Award 2025
NeurIPS AI4Mat Workshop

Undergraduate Research Spotlight 2025
University of California, Riverside

Student Travel Award 2024
IEEE International Conference on Big Data

NSF REU Fellowship 2024
University of California, Riverside

Chancellor's Honor List 2023 - 2024
University of California, Riverside

Other Experience

Computer Science Grader March 2024 - June 2024
University of California, Riverside

Data Science Challenge July 2023
Lawrence Livermore National Laboratory

Data Science Camp Mentor July 2022 - Sept. 2022
Spotline, Inc.