

# Shaan Pakala

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Website: <https://shaanpakala.github.io/>

[Google Scholar](#), [LinkedIn](#) & [GitHub](#)

## About

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I am a 1<sup>st</sup> 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

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### **Ph.D. in Computer Science**

Sept. 2025 – Present

*University of California, Riverside*

- Advisor: Prof. Vagelis Papalexakis

### **B.S. in Data Science**

Sept. 2021 – June 2025

*University of California, Riverside*

- 3.9 upper division GPA
- Chancellor's Honor List

## Research Experience

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### **Graduate Research Assistant**

June 2025 – Present

*University of California, Riverside*

- Worked on using tensor decomposition to efficiently train image generation models [3]
- Worked on surrogate modeling in material design with Lawrence Livermore National Laboratory [4]

### **Graduate Research Intern**

June 2025 – Present

*Lawrence Livermore National Laboratory*

- Worked in the predictive healthcare group with Dr. Braden Soper & Dr. Priyadip Ray, in collaboration with clinicians/neuroscientists from Stanford & The University of Tokyo

### **Undergrad Research Assistant**

June 2024 – June 2025

*University of California, Riverside*

- Worked with Professors Papalexakis, Tsotras, and Chen on surrogate modeling to efficiently design optimal data science pipelines (hyperparameter optimization, SQL query cardinality estimation) [1]
- Also worked on using machine learning based surrogate modeling for material design [2]

### **Undergrad Research Assistant**

March 2024 – Dec. 2024

*University of California, Riverside*

- Worked with Professor Lonardi on using machine learning for accelerated protein sequence analysis

## Papers

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### Main Conference

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

### Workshop

- [2] [Shaan Pakala](#), D. Ahn, E. Papalexakis, “Tensor Completion for Surrogate Modeling of Material Property Prediction,” *AAAI Bridge on Knowledge-Guided Machine Learning* (2025). [\[PDF\]](#)
- [3] P. Goulart\*, [Shaan Pakala](#)\*, E. Papalexakis, “Efficiently Generating Multidimensional Calorimeter Data with Tensor Decomposition Parameterization,” *ICCV Workshop on Representation Learning with Very Limited Resources* (2025). [\[PDF\]](#) [\[Code\]](#)
- [4] [Shaan Pakala](#), A. Gongora, B. Giera, E. Papalexakis, “Surrogate Modeling for the Design of Optimal Lattice Structures using Tensor Completion,” *NeurIPS Workshop on AI for Accelerated Materials Design* (2025). [\[PDF\]](#) [\[Code\]](#)

\* denotes equal contribution

## Awards

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|---|-------------|
| <b>Undergraduate Research Spotlight</b><br><i>University of California, Riverside</i> | 2025        |
| <b>Student Travel Award</b><br><i>IEEE International Conference on Big Data</i>       | 2024        |
| <b>NSF REU Fellowship</b><br><i>University of California, Riverside</i>               | 2024        |
| <b>Chancellor’s Honor List</b><br><i>University of California, Riverside</i>          | 2023 – 2024 |

## Other Experience

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|--|------------------------|
| <b>Computer Science Grader</b><br><i>University of California, Riverside</i>   | March 2024 – June 2024 |
| <b>Data Science Challenge</b><br><i>Lawrence Livermore National Laboratory</i> | July 2023              |
| <b>Data Science Camp Mentor</b><br><i>Spotline, Inc.</i>                       | July 2022 – Sept. 2022 |