SHAAN PAKALA

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https://shaanpakala.github.io/
Google Scholar, Github, LinkedIn

Education

University of California, Riverside (UCR)   Sept 2021 – June 2025
B.S. in Data Science & Engineering
Upper Division GPA: 3.9/4.0

Research Experience

Data Science Research Assistant   Sept. 2024 - Present
Supervisor: Professor Vagelis Papalexakis   UCR

· Leading research work on using tensor completion to predict material properties (e.g. band gap, energy)
· Presenting paper [2] as a poster at AAAI 2025 Knowledge-Guided Machine Learning Bridge Program
· Tensor completion shows better reliability and efficiency when compared with MLPs and XGBoost

NSF REU Research Intern   June 2024 - Sept. 2024
Supervisors: Professors Vassilis Tsotras, Jia Chen, and Vagelis Papalexakis   UCR

· Led team of 3 undergraduates in research project, in collaboration with UCR PhD students
· Presented full conference paper [1] at IEEE International Conference on Big Data 2024
· Modeled hyperparameter tuning, neural network architecture search, and SQL query cardinality estimation as tensor completion problems to accelerate searching for their optimal configurations
· Developed task-specific tensor completion algorithm to cut parameters without decreasing performance

Bioinformatics Research Assistant   March 2024 - Dec. 2024
Supervisor: Professor Stefano Lonardi   UCR

· Worked on bioinformatics research problems using machine learning, related to protein sequence analysis
· Developed machine learning model to classify protein subsequences as antimicrobial peptides
· Experimented with vectorization techniques as well as different size context windows for classifier

Other Experience

Computer Science Grader   March 2024 - June 2024
Supervisor: Dr. Elena Strzheletska   UCR

· Grader for Upper Division Data Analysis Methods (CS 105 at UCR)
· Facilitated and graded lab and project demos, as well as graded quizzes

Papers

Full Conference Paper

[1] <u>Shaan Pakala</u>, 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]

Poster

[2] <u>Shaan Pakala</u>, D. Ahn, E. Papalexakis, "Tensor Completion for Surrogate Modeling of Material Property Prediction," AAAI 2025 Knowledge-Guided Machine Learning Bridge Program. [PDF]