Akhil Jalan, PhD

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SUMMARY

Machine learning scientist combining a strong research record and industrial experience in real-world biosciences applications. Led, published, and presented research at top international venues including ICML (2025), NeurIPS (2024), Operations Research (2024), and ACM STOC (2023) (see https://akhiljalan.github.io/papers.html).

SKILLS

Artificial Intelligence & Machine Learning: LLM Finetuning (LoRA, SFT), Reinforcement Learning / Reasoning (STaR, CoT, RLHF), Synthetic Data Generation (SPIN, Multi-Prover Games)
Statistics: Transfer Learning, Active Learning, Design of Experiments, High-Dimensional Statistics
Applied Mathematics: Dynamical Systems / Mechanistic Modeling, Control Systems, Fourier Analysis
Bioprocessing: Raman Spectroscopy, Dielectric Spectroscopy, Process Analytical Technology
Bioinformatics: Metabolic Modeling, Multi-omics Analysis, Network Analysis
Programming: Python, R, Julia, MATLAB, SQL

SELECTED WORK EXPERIENCE

BioPhy August 2025
Research Scientist (Contract) *New York, NY*

- Trained LoRA-tuned LLM agents (100M-7B size) for pharmaceutical operations & drug development
- Derived task-specific scaling laws for Q&A on custom FDA corpus for compute-efficient scale-up
- Developed scalable pipeline for LLM fine-tuning via Self-Instruct iteration on unstructured, heterogeneous FDA & EMA data

Van Heron Labs July 2024 - May 2025
Research & Development Intern *Remote*

- Project lead for multi-omics metabolic modeling with cross-species transfer learning
- Linear-time inference algorithm for 300+ metabolic pathways in low-cost cell culture media formulation

Ark Biotech May 2023 - Aug 2023
Research & Development Intern *Cambridge, MA*

- 89% increase in viable cell density & 30+% reduction in doubling times for bioreactor cell cultures
- Model-based control algorithm for bioreactors using Raman spectroscopy & custom machine learning algorithm for state estimation
- Lead author & presenter for publication on Process Analytical Technology (*IFPAC Global* 2024).

EDUCATION

University of Texas at Austin Aug 2020 - May 2025
Ph.D. Computer Science

University of California, Berkeley Aug 2015 - May 2019
B.A. Applied Mathematics, Highest Honors