Bose Kaikini

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Overview

Computer Science and Math Major with a focus in Machine Learning, Applied Mathematics and Quantitative Finance, with specific interest in stochastic modeling for HFT strategies.

Education

2025-Present	Double Major in Computer Science and Math at University of South Carolina GPA: 4.0/4.0
2023-2025	Governor's School for Science and Math (Hartsville, US)
2020-2023	Dhirubhai Ambani International School (Mumbai, India)

Experience & Engagement

Internships

- **Research**: USC Engineering and Computing — Implemented topological data analysis techniques to analyze LiDAR plots on NSF funding (Summer 2025)
- **Finance**: SC Federal Credit Union — Financial analysis and projections for overdraft policy overhaul impacting over 12000 clients (Summer 2024)
- **Economics**: Newberry County Department of Economic Development — Customer acquisition and project analysis worth $10 million+ (Spring 2024)
- **Forecasting**: RSPN Equity Research — US mortgage and real estate market pricing and projections (Spring 2024)

Awards and Competitions - Fall 2025

- **NASA SpaceApps Hackathon** — Winner - Best Use of Data
- **SC Quantum Quantathon v2** — Winner - Quantum Variational Machine Learning
- **Citadel University Applied Math Competition** — Top 3 - Modeling Unbiased State Voting Lines
- **HackPrinceton** — Identified urban structural/contamination issues through camera based ML scraper
- **USC Journey Research Grant Recipient** — Undergraduate STEM research grant

Projects & Research

Spectral Graph Theory Research	Testing computational approach to higher vertex values for DS graphs and Haemers' Conjecture, targeting an efficient quasipolynomial bound for DS graph proportion
Algorithmic Trading Modeling	Developing and optimizing trading algorithms using data-driven and ML-based strategies, Alpaca API based
SIMIODE Differential Modeling	Modeling the degradation of generative AIs trained on synthetic data
Image Processing ML Model	Designing application to approximate mathematical functions from user-drawn images using ML recognition and nonlinear error reduction

Technical Skills

Programming Languages/Platforms	Python, Java, Kotlin, C++, SQL, Unix, Sage, HTML, CSS, JavaScript, qBraid, R, Jupyter Notebooks, React, Git, Azure, SLURM, Jira
Math Experience	Boolean Functions, Topological Data Analysis, Financial Math, Linear and Abstract Algebra, ODEs, Calculus I–III

Campus Involvement & Languages

Campus Involvement

- Student Government - Freshman Council & Academics Chair
- University Ambassador
- USC Emerging Leader Program
- Academic Advisory Council Member
- Campus Pedestrian Traffic Sentiment Research
- Mathematics Department Student Grader

Languages:

- English - Native
- Hindi - Native
- Spanish - Fluent
- Mandarin - YCT 4