

# 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

<b>Spectral Graph Theory Research</b>	Testing computational approach to higher vertex values for DS graphs and Haemers' Conjecture, targeting an efficient quasipolynomial bound for DS graph proportion
<b>Algorithmic Trading Modeling</b>	Developing and optimizing trading algorithms using data-driven and ML-based strategies, Alpaca API based
<b>SIMIODE Differential Modeling</b>	Modeling the degradation of generative AIs trained on synthetic data
<b>Image Processing ML Model</b>	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