Srivatsa Srinivas

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Education

University of California, San Diego — San Diego, CA
PhD. in Mathematics — *Sep 2019 — May 2025*
- GPA : 4.0/4.0
- Specialization: Information Theory, Probability, Number Theory, Group Theory

The Ohio State University — Columbus, OH
BSc. in Electrical Engineering and Mathematics — *Aug 2014 — May 2019*
- GPA: 3.96/4.0
- Summa cum laude with a double degree in Electrical Engineering and Mathematics

Work Experiencei

Graduate Teaching Assistant — Sep 2019 — May 2025
University of California, San Diego — *San Diego, CA*
- Taught courses of various levels from elementary calculus to advanced real analysis
- Consistently received a recommendation of rating of greater than 95%

Acheivements

Solving open problems in Random Walks on Compact Groups — 2022 — Present
- In joint works with my advisor, I solved open problems in the field conjectured by a Fields Medalist [Link] and pushed the field forward [Link]
- We are currently typing up more results which provide even better results in the field

Projects

SMT solvers in Number Theory (github.com/srivatsasrinivasmath/SymbolicPolynomialEquality) 2025
- Used the Haskell package `sbv` as an interface to `z3` in order solve the following problem, "What is the longest arithmetic progression that is a subset of a geometric progression" [Blog Post]
- Used functional programming principles, involving constructing a co-data type to model search trees whose nodes are wrapped in monads

Formalizing Real Analysis in the Lean Theorem Prover (github.com/lean-mine/baby-rudin-project) 2025
- Formalized problems from the seminal Real Analysis textbook "Principles of Mathematical Analysis" by Walter Rudin

Proving that the Fast marching method is a corollary of Djikstra's algorithm (github.com/srivatsasrinivasmath/generalized-djikstra) 2025
- Formulated a generalized version of Djikstra's algorithm and proved that the Fast marching method is a corollary of it
- Created a minimal implementation in Rust

Skills

- Mathematics: Information Theory, Probability, Number Theory and Group Theory
- Haskell: Functional Programming, Category Theory, Formal Verification, Data Cleaning, Data Scraping and Database management
- Lean: Formal Verification
- Rust: Computer Graphics, General Programmig
- Python: Data Analysis, General Programming
- NixOS: General Proficiency