Gaurav Chandan

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Research Interests

Mathematical Finance, Machine Learning, Stochastic Analysis, Computational Complexity

Education

BS-MS Dual Degree (with a major in Mathematics) November 2022 – Present
Indian Institute of Science Education and Research Pune, India

- CGPA: 9.2

Projects

Arbitrage-free Data Driven Pricing Models Jun 2026 - Present
Indian Institute of Science Education and Research IISER Pune, India

- Ongoing Master's Thesis work attempting to survey and extend literature on machine learnt pricing models with rigorous guarantees of arbitrage-freeness. Advised by Prof. Anindya Goswami

Fundamentals of Option Pricing Theory Jan 2026 - Apr 2026
Indian Institute of Science Education and Research IISER Pune, India

- A guided reading project covering the basic ideas of option pricing theory and Ito calculus followed by a literature survey on data driven pricing models. Supervised by Prof. Anindya Goswami

Algebraic Combinatorics and Computational Complexity Aug 2025 - Nov 2025
Indian Institute of Science Education and Research IISER Pune, India

- Learned some elementary algebraic combinatorics and briefly surveyed literature attempting to formalise the notion of 'combinatorial' proofs with the use of ideas from counting complexity.
  Supervised by Prof. Steven Spallone

Algebraic Complexity Theory December 2024 - July 2025
Indian Institute of Technology IIT Delhi, India

- Studied recent advancements in algebraic complexity theory lower bounds, some connections to formal language theory and some elementary ideas underlying Mulmuley and Sohoni's Geometric Complexity Theory. Supervised by Prof. Nikhil Balaji

Elliptic Curve Discrete Logarithm Problem Aug 2024 - April 2025
Indian Institute of Science Education and Research IISER Pune, India

- Studied the basic theory of elliptic curves and explored a conjectured efficient solution to the elliptic curve discrete logarithm problem guided by Professor Ayan Mahalanobis

Awards and Scholarships

DST INSPIRE Scholarship Batch of 2022
Ministry of Science and Technology, Government of India

TALKS

Primes is in P October 2024
Indian Institute of Science Eduaction and Research Pune, India

- Presented a complete proof the AKS primality test to an audience of undergraduates as part of a Math Club event

SKILLS

Programming Languages and Tools:
Proficient in: Python, Latex
Familiar with: SageMath, Ocaml, C++, Lean 4

Languages:
English (Fluent)
Kannada (Native speaker; Fluent)
Hindi (Working knowledge)

SCHOLASTIC ACCOMPLISHMENTS

Joint Entrance Examination (Advanced) 2022
All India Rank: 3789

Karnataka Common Entrance Test 2022
Rank: 66

Karnataka Second Year Pre-University Examination) 2022
3rd highest scorer overall (596/600)

Karnataka Secondary School Leaving Certificate Examination 2020
3rd highest scorer overall (623/625)

EXTRA-CURRICULARS

Endurance Running
Completed the relay race at IronMan 70.3 Goa 2024

Football
Member of the IISER Pune Men's Football Team 2023-24
Played in the Karnataka State Football Associations's Youth League in 2021
Played at the district level (Mysuru, Karnataka) in 2018 and 2019

Quizzing
Winner at the district level (Mysuru), Prajavani Quiz 2020
3rd place at the state level, Prajavani Quiz 2020
Co-hosted the college's (SKCJC) annual quiz as part of Satvam (yearly fest) 2022

Other hobbies
Brazilian Jiu Jitsu, Basketball