Ayaan Bedi

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Chennai | +91 8005868105 | ayaanbedi.cmi@gmail.com | LinkedIn

Key Interests: Automata Theory, Logic, Games, Finite Model Theory, Language Theory.

Summary

Education

Chennai Mathematical Institute / Masters of Science (M.Sc.), Computer Science
Aug 2021 - Present, Chennai, India

- Current CGPA: 10/10
- Relevant Courses: Theory of Computation, Logic, Games on Graphs, Finite Model Theory, Weighted Automata.

Krea University / Bachelor of Science (B.Sc Hons.), Computer Science (minor in Mathematics)
Jul 2021 - Jun 2024, Sricity, India

- CGPA: 9.52/10
- Awarded Excellence in Computer Science (Top of the Batch)

Experience

Chennai Mathematical Institute / Masters' Thesis
March 2025 - Present, Chennai, India
Griback Normal Form Like Characterisation for Multi-Context Free Languages

Aix Marseille University / Intern
May 2025 - July 2025 , Marseille, France
Explorability in Pushdown Automata

IIT Delhi / Intern
May 2024 - July 2024, Delhi, India
Algebraic Complexicity Theory

- Explored algebraic complexity theory and complexity classes such as VP and VNP alongside Professor Nikhil Balaji.
- Studied Models like Algebraic Circuits, Universal Algebraic Circuits and Straight line programs
- Drew parallels between the uniform Blum-Shub-Smale (BSS) model, and the non-uniform Valiant's model, to potentially develop a notion of the CoVNP class

Krea University / Bachelors' Thesis
Oct 2023 - May 2024, Sricity, India
Word problem in RAAG: Formal Verification

- Worked on the Isabelle to formalize Right Angles Artin-Tits Groups and proofs of the Word Problem under Prof. Turaga Prathamesh
- Implement the algorithm by John Crisp, Eddy Godelle, and Bert Wiest in a functional framework
- Used Isabelle to prove the correctness of the algorithm

Publications

- Data Analyst Skillpath| Udemy| Learnt tools like Excel, SQL and Python

Projects

- **Software** - SQL, Python, Tableau, Superset, Excel, PowerPoint
- **CRM / Tools** - Salesforce, Deepgram, ElevenLabs, WhatsApp Chatbot, Connector App