Anvit Aggarwal

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AnvitAggarwal

Education

BTech	**Indian Institute of Technology, Gandhinagar**, Computer Science and Engineering	CPI : 8.84/10 July 2024 – May 2028
12th	**Geetanjali Olympiad School, Bengaluru** CBSE	94.2%
10th	**Delhi Public School, Bangalore East** CBSE	97.6%

Relevant Coursework

CS: Computing (10), Data-Centric Computing (9), Probability, Statistics and Data Visualisation (10), DSA-I (8), Discrete Maths (10), Digital Systems (10)
Maths: Calculus in Single Variable and Linear Algebra (8), Ordinary Differential Equations (10), Calculus in Several Variables (9)

Skills

Interests: Programming Language Theory, Automatic Theorem Proving, Functional Programming, Software Engineering

Programming Languages: C, Python, OCaml, Lean, Verilog

Libraries/Tools: Rocq, Numpy, Pandas, Matplotlib, Arduino, Git

Projects

Formalising Barrington's Theorem in Lean — github.com/AnvitAggarwal/barrington-theorem-lean
Advised by Prof. Balagopal Komarath, IIT Gandhinagar | August 2025 - Present

- Formalised Barrington's theorem, connecting width-5 branching programs to NC[1] Boolean circuits, using the Lean theorem prover.
- Developed machine-checked proofs with functional programming techniques and constructive logic.
- Incorporated feedback from the Leanprover Zulip community to improve proof rigour and readability.
- Extending the work for generalisation and integration with CSLib, a Lean repository of formalised CS theorems.

Automatic Vacuum Cleaning Robot — Project Demo Video
Course Project, ES117 IIT Gandhinagar | April 2025

- Designed and built a cost-effective automatic vacuum robot capable of clearing small debris using Arduino.
- Implemented motor control, obstacle detection, and basic navigation algorithms to enable autonomous cleaning.

IPL Team Strength Estimator — anvitaggarwal.github.io/blog
Personal Project | June 2025

- Analyzed IPL team performance using Python, Numpy, Pandas, and Matplotlib to evaluate standings beyond raw points.
- Developed a Chess-inspired Elo rating system to rank teams more accurately given uneven match schedules.
- Visualized insights to identify discrepancies between official points and actual team strengths.

Other Involvements

Lambda Hobby Group, IIT Gandhinagar — March 2025 - Present

- A club focused on Programming Language Theory and fields related to it.