

Speaker: [Farzan Byramji](#), an alumnus of IIT Kanpur.

Date: 1st Sept 2026 (TUE)

Time: 2:00 PM - 3:00 PM

Venue: KD 101 (CSE Department)

Title: Lower bounds for restricted Resolution over parities

Abstract:

Proof complexity studies how long do proofs of propositional tautologies need to be in various proof systems. One such proof system is Resolution which captures the reasoning ability of many modern SAT solvers. While we have various strong lower bounds for Resolution, our understanding of its extension Resolution over parities is quite limited. Resolution over parities (Res(+)) extends the resolution proof system to allow linear algebra mod 2. Though no strong lower bounds are known for this proof system, there has been some progress on restricted subsystems of Res(+) recently.

After an introduction to proof complexity, I will survey recent work on restricted Res(+) and describe some of the underlying proof ideas. The talk will partially be based on joint work with Sreejata Kishor Bhattacharya, Arkadev Chattopadhyay and Russell Impagliazzo, proving lower bounds on the size of Res(+) proofs of restricted depth.