

## **Critical Thinking Education: Automated Theorem Proving to the Rescue**

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It is difficult to overestimate the importance of critical thinking and more specifically logical reasoning in everyday life as well as in science. Logic plays both an implicit and an explicit role in shaping many of our beliefs, decisions and actions. Through logic we can decide crucial properties like the validity or invalidity of arguments and the consistency or inconsistency of sets of beliefs. In this talk, I consider some obstacles and opportunities that emerge in the context of automating semantic and syntactic methods of doing logic for pedagogical purposes. I first outline some historical developments in these areas. I then turn to my own work which includes a free multi-platform app called 'The Logic Calculator' and an automated theorem prover (work-in-progress) that seeks to make human-readable proofs easier to produce. The talk concludes with some open-ended questions that I hope the audience will help answer.