Bachelor Project 2021

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Project Title: SAT-based techniques for Approximate Circuit Design

One potential answer to the ever-growing energy quest is represented by a new design paradigm called Approximate Computing (AC), which consists of paying a small loss in accuracy for a large improvement in energy consumption. In particular, the project concerns Approximate Logic Synthesis, which is the process of automatically generating, given an exact circuit and a tolerated error threshold, an approximate circuit counterpart where the error is guaranteed to be below the given threshold. The Boolean satisfiability problem (SAT) states the following: given a formula containing binary variables connected by logical relations, SAT aims to establish whether there is a way to set the variables so that the formula evaluates to true. The project's goal is designing and improving the existent SAT-based formulations and algorithms for circuit design in order to generate more efficient approximate circuits.

Weeks 1 - 3	Familiarize with SAT, Z3, and Python interface
Weeks 4 - 11	Familiarize with tools, implementation
Weeks 12 - 14	Write report and poster