

Master's thesis

Operation Chaining in High-Level Synthesis of Approximate Circuits

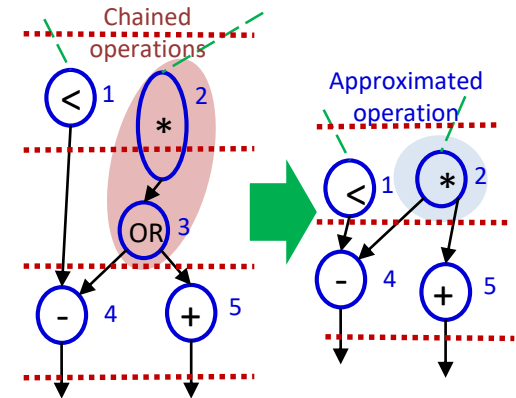
High-Level Synthesis (HLS), including scheduling and binding algorithms, plays an important role in determining the RTL structure of designs from their behavioral descriptions. High-level synthesis of approximate circuits is a very challenging problem and cannot be solved analytically. One possibility is using operation chaining to group highly related operations in order to find their appropriate approximations. In this thesis you will explore and implement this method followed by experimental evaluations using standard HLS benchmarks.

Type of project

- Understanding the “Scheduling/Binding Algorithms” in behavioral synthesis process
- Familiarize yourself with open source HLS tools like LegUp
- Implementing an approximate-aware scheduling/binding algorithm based on operation chaining within LegUp

Prerequisites

- C/C++ programming skills are helpful
- Basic experience with ASIC or FPGA synthesis flows



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