Formal Methods at Intel - An Overview

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Abstract

Since the 1990s, Intel has invested heavily in formal methods, which are now deployed in several domains: hardware, software, firmware, protocols etc. Many different formal methods tools and techniques are in active use, including symbolic trajectory evaluation, temporal logic model checking, SMT-style combined decision procedures, and interactive higher-order logic theorem proving. I will try to give a broad overview of some of the formal methods activities taking place at Intel, and describe the challenges of extending formal verification to new areas and of effectively using multiple formal techniques in combination.