CPALockator

Thread-Modular Approach with Transition Abstraction for Analysis of Multithreaded Software

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Thread-Modular Approach

Thread || Thread || ... || Thread

Thread || Environment , ... , Environment || Thread
Abstract transition

When it can be applied?

How it can be applied?
Environment

Abstract transition
pc = 2  g = 1

Thread

Abstract transition
pc = 2  g = 1

Environment

Abstract transition
*  g = 1

Environment

Abstract transition
*  g = *
Scaling on a real software

Unsound bug finding

Theoretically sound approach

Fast static analysis

Precise model checking

RELAY, Locksmith,...

CBMC, SMACK,...

- Scaling on a real software
- Unsound bug finding

- Small amount of false alarms
- Theoretically sound approach

Adjustable balance between speed and precision
<table>
<thead>
<tr>
<th>Benchmark</th>
<th>kLOC</th>
<th>Threads</th>
<th>CPALockator</th>
<th>Other participants</th>
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<td>4</td>
<td>X</td>
<td>X</td>
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