

de Boer, Frank S.; Grabe, Immo**Automated deadlock detection in synchronized reentrant multithreaded call-graphs.** (English) [Zbl 1274.68084](#)

van Leeuwen, Jan (ed.) et al., SOFSEM 2010: Theory and practice of computer science. 36th conference on current trends in theory and practice of computer science, Špindlerův Mlýn, Czech Republic, January 23–29, 2010. Proceedings. Berlin: Springer (ISBN 978-3-642-11265-2/pbk). Lecture Notes in Computer Science 5901, 200-211 (2010).

Summary: In this paper we investigate the synchronization of multithreaded call graphs with reentrance similar to call graphs in Java programs. We model the individual threads as visibly pushdown automata (VPA) and analyse the reachability of a state in the product automaton by means of a context-free language (CFL) which captures the synchronized interleaving of threads. We apply this CFL-reachability analysis to detect deadlock.

For the entire collection see [\[Zbl 1180.68007\]](#).

MSC:

- [68N30](#) Mathematical aspects of software engineering (specification, verification, metrics, requirements, etc.)
- [68N19](#) Other programming paradigms (object-oriented, sequential, concurrent, automatic, etc.)
- [68Q45](#) Formal languages and automata
- [68R10](#) Graph theory (including graph drawing) in computer science

Cited in 2 Documents

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