

Einladung

zum Informatik-Kolloquium des
AB Programmiersprachen und Übersetzer am
Dienstag, den 21. April 2009, um 14:00 Uhr s.t.
in der Bibliothek E185.1, Argentinierstr. 8, 4. Stock (Mitte)

Es spricht

**Ass.-Prof. Dr. Armelle Bonenfant &
Ass.-Prof. Dr. Marianne de Michiel**

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über

Loop Analysis with oRange

Abstract: One of the important steps in processing the worst case execution time (*WCET*) of a program is to determine the loops upper bounds. Such bounds are crucial when verifying real-time systems. We will present oRange, our tool which performs a static loop bound analysis associating flow analysis and abstract interpretation. It considers binary operators (+, -, *, /) for the loop increment, nested loops, non-recursive function calls, simple loop conditions (==, !=, <, ≤, >, ≥, &&) and loop upper bound values (instead of intervals). We will present the different steps of the analysis and some results on the Mälardalen benchmark suite.

Biographies: The research interests of the TRACES team include hardware issues of real-time embedded systems. The main goal is to guarantee that the execution time of an application code meets the system deadlines. We focus on characterizing the temporal properties of components off-the-shelves. Our target is to propose ways to use these components such that safe and tight worst-case execution time estimates can be computed. We also study architectural extensions that should improve the time predictability of the components. The estimation of the WCET requires three steps: a static analysis of the code identifies all the possible execution paths; the target hardware is modelled to determine the individual execution times of the basic blocks; then, the results of the previous steps are combined to evaluate an upper bound of the global execution time. Part of our work concerns the first and second steps.

Dr. Marianne de Michiel is an assistant professor; she works especially on loop bounds. Armelle Bonenfant is an assistant professor, too. She joined the team in 2007 and collaborates with Marianne de Michiel.

(<http://www.irit.fr/recherches/ARCHI/MARCH/index.php3>)

Zu diesem Vortrag lädt der *Arbeitsbereich für Programmiersprachen und Übersetzer am Institut für Computersprachen* herzlich ein.

Tee: 13:45 Uhr in der Bibliothek E185.1, Argentinierstr. 8, 4. Stock (Mitte).