Informatik-Oberseminar

Rheinisch-Westfälische Technische Hochschule Aachen
Lehrstuhl für Informatik VII

EINLADUNG

Zeit: Donnerstag, 18. Dezember 2003, 14.00 Uhr

Ort: Hörsaal AH I, Ahornstr.55

Referent: Inf.-Dipl. Thierry Cachat

Thema: Games on Pushdown Graphs and Extensions

Abstract: Two player games are a standard model of reactive computation, where e.g. one player is the controller and the other is the environment. A game is won by a player if she has a winning strategy, i.e., if she can win every play. Given a game description, our aim is to compute the winner and a winning strategy. For finite graphs these problems have been solved for a long time, although some complexity questions remain open.

We consider different classes of infinite graphs, from transition graphs of pushdown automata up to graphs of the Caucal hierarchy, and we investigate different winning conditions: reachability, recurrence (Büchi), parity condition, and a so called "Sigma3 condition".

Two kinds of techniques are developed: a symbolic approach based on finite automata recognizing infinite sets of configurations and a game simulation which reduces a given game into a simpler one and solves it. Different kinds of strategies are also constructed: either positional ones or strategies with pushdown stack memory.

Es laden ein: Die Dozenten der Informatik