Informatik-Kolloquium

Rheinisch-Westfälische Technische Hochschule Aachen
Lehrstuhl für Informatik I

RWTH

EINLADUNG

Zeit: Montag, 03. Juni 2002, 13.00 Uhr

Ort: 4013 (Seminarraum Informatik I).

Referent: Prof. Dr. Jarkko Kari, Universität Turku/Finnland

Thema: On synchronizing finite automata

Abstract:

A deterministic finite automaton (DFA) is called synchronizing if there exist a word w and a state s such that the word w takes the automaton into state s from every state of the automaton. The word w is called a synchronizing word of the automaton. The road coloring problem and Cerny's conjecture are two old questions concerning synchronizing automata. Cerny's conjecture states that every synchronizing DFA with n states has a synchronizing word whose length is at most $(n\text{-}1)^2$. The road coloring conjecture states that a directed graph of uniform out-degree admits a labeling of its edges that makes it into a synchronizing DFA, if the graph is strongly connected and aperiodic. We prove both these conjectures in the special case that the graph has not only uniform out-degree but also uniform in-degree. We define a new concept of stability of states, and reformulate the road-coloring problem in terms of the stability relation.

Es laden ein: Die Dozenten der Informatik