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Dipartimento di Matematica e Informatica

Words
and
Automata
Research
Group

Seminar Announcement

Approximate String Matching by Simulating Reactive Automata

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Friday 17th January 2014, 12 a.m.

Room 7, Via Archirafi 34, 90123 Palermo

The approximate string matching is one of the fundamental problems in Computer Science and consists in finding all occurrences of a pattern in a text, allowing for the presence of editing errors in the input data. Solutions based on filtering methods or finite state automata are among the most efficient approaches to the problem.

In this talk we will discuss about some solutions to the approximate string matching problem based on a special kind of automata, called "reactive automata", modelled after the input pattern. A reactive automaton can be seen as standard automaton which is extended with a set of special links, called "reactive links", with the aim of modifying the behaviour of the automaton itself. Such data structure can be used to drastically reduce the size of both deterministic and non-deterministic automata. For this reason they can be efficiently simulated by using the well known bit-parallel technique. We will show how to apply this approach to efficiently solve some particular problems related with approximate string matching.

For further information:

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All interested people, in particular students, are invited to participate