Università degli Studi di Palermo

Dipartimento di Matematica e Informatica

Words and Automata Research Group

SEMINAR ANNOUNCEMENT

Title: Extracting irredundant tandem motifs from strings

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Room 7
Via Archirafi 34, 90123 Palermo

Abstract:

An important problem in Computational Biology is that of extracting string motifs made of two or several "blocks" that occur together within a maximum fixed distance. This could be useful, for example, to individuate transcription factors binding sites in genomic sequences. Although the problem has been extensively addressed in the literature, finding efficient ways to limit the number of such composite motifs when some non specification is allowed is not yet widely explored. In this talk a method will be illustrated to extract pairs of subwords (m_1, m_2) from a text string s of length n, such that, given also an integer constant d in input, m_1 and m_2 occur in tandem within a maximum distance of d symbols in s. The main aim is that of eliminating the possible redundancy from the candidate set of the so found tandem motifs, by exploiting suitable notions of maximality and irredundancy. In particular, the number of non-overlapping irredundant tandems extracted this way is $O(d^2n)$.

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

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