

Shortest Superstring

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Abstract

In the *Shortest Superstring* problem (SS) one has to find a shortest string s containing given strings s_1, \dots, s_n as substrings. The problem is NP-hard, so a natural question is that of its approximability.

One natural approach to approximately solving SS is the following *GREEDY* heuristic: repeatedly merge two strings with the largest overlap until only a single string is left. This heuristic is conjectured to be a 2-approximation, but even after 30 years since the conjecture has been posed, we are still very far from proving it. The situation is better for non-greedy approximation algorithms, where several approaches yielding 2.5-approximation (and better) are known.

In this talk, we will survey the main results in the area, focusing on the fundamental ideas and intuitions.

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