

CSP Problem with SA

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For configure the Simulated Annealing algorithm for the Cutting Stock Problem, we adjust several parameters of the algorithm, such as:

- 1- Initial solution: Generate the initial solution with [0] so it can help to algorithm work better.
- 2- Objective function: The objective function reflect the minimization of waste in all roll with this work the number of roll that used will be minimum.
- 3- Neighborhood structure: This way can impact the algorithm's exploration capabilities. Changing cutting pattern help to diversity the search space. we use randomly decreasing and increasing the numbers of cuts in the pattern.
- 4- Cooling schedule: The cooling determines the balance between exploration and exploitation. for this problem we use cooling rate 0.003 for cooling because this help to more exploration.
- 5- Stopping criterion: We use the numbers of iteration got stopping criterion.

using linear function for cooling rate seems useful but in this algorithm we use stable cooling rate for temperature function.

The avg answer for inputs:

input1: 49
input2: 72
input3: 102
input4: 209