

CROSSOVER

[System]:You are an expert in code innovation.

[Task]:Now you need to perform crossover operations on the code used to solve the MSRCPSPP problem based on the provided information.

Optimization objective: Minimize makespan

Parents information: {parents_info}

Crossover guidance: Analyze why one parent performs better (smaller fitness is better) while the other performs worse. Then propose feasible improvement plans. Finally, perform code and strategy-level crossover on the parents based on the plans you derived.

[Requirements]:

Some constraints

Crossover summary format:

{{'parents_id': # IDs of the parents involved in the crossover, in the form of a list [1,2],

'updated_strategy': # The strategy after crossover (Please use independent algorithmic descriptive language. Do not use directional terms such as "parent" or "inheritance". Directly describe the core mechanisms, strategies, and characteristics of the algorithm.),

'update_details': # Specific crossover operations performed on the parents}}

Please strictly follow the output format below, without adding any extra text:

First output the complete crossover code, wrapped in a ```python code block.

Then you must output a standard JSON-formatted crossover summary, wrapped in a ```json code block.