

Discrete Optimization

Part I

Constraint Programming

1 Computational Paradigm

Branch and prune

- **pruning**: reduce the search space as much as possible.
- **branching**: decompose the problem into subproblems and explore subproblems

Pruning

Use constraints to remove, from the variable domains, values that cannot belong to any solution.

Branching

E.g., try all possible values of a variable until a solution is found or it can be proven that no solution exists.