CP: Modelling
↓
Solving
↓
Branching
↓
Solutions

Filtering/Pruning

less noise in discrete solvers than continuous solver.

constraints variables domain.

Filter a continuous domain
- split.
- converge.

Pruning (clipped part of Domain).
Filtering - Continuous domains
achieved through
Pruning - Discrete domains local consistency propagation.
techniques.
We have constraints \( C_1, C_2 \ldots C_n \) where we check for consistency (local).

\[\begin{align*}
\text{eq:} \\
& y = x^2 \\
& C_1: x \in [0, 1], y \in [0, 1], \ C_2: x \in [0, 1], y \in [1, x^2] \ \text{?} \\
& C_2: x \in [0, 1], y \in [0, 1], \ x = \sum x, y^2, \ D = [0, 1] \times [0, 1]
\end{align*}\]

Branching:

- split into y dimension. Not all solutions are consistent. So we filter out the inconsistent data.

Sometimes solvers generate instead of one solution, two solutions which are duplicates.

Global Consistency: \( \exists! \)

global constraints eq: all diff. Drawback: the set of global constraints has to fit into a pattern of any one.
Solving constraints → NP-hard problem. (using heuristics the time is reduced)