

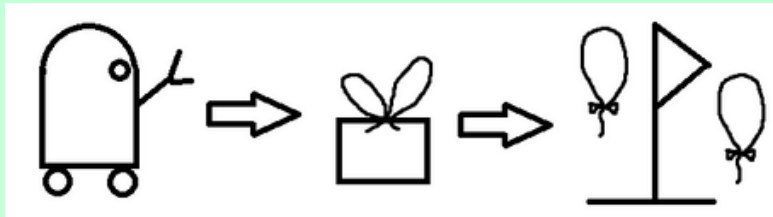
Extending CBS to efficiently solve MAPFW

The MAPFW Problem

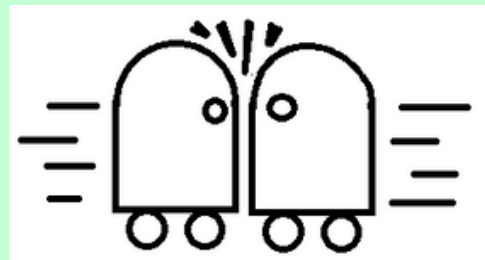
Multi-Agent Path Finding with Waypoints

Route

Agents in a maze - past waypoints - to a goal



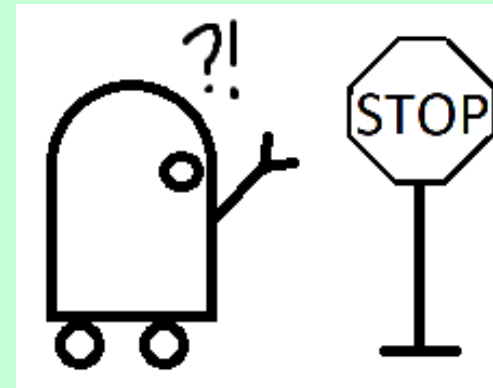
Without agents colliding



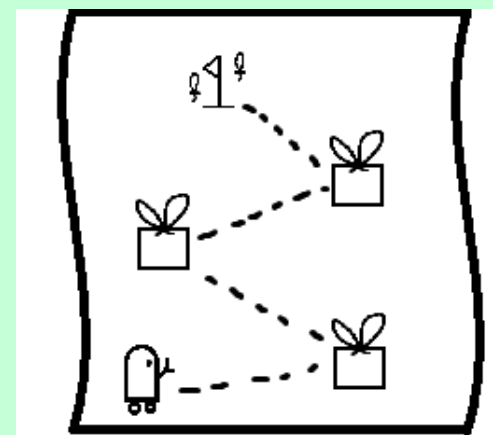
The Solution

Conflict Based Search with Waypoints (CBSW)

Add constraints to agents their paths to prevent conflicts (collisions)

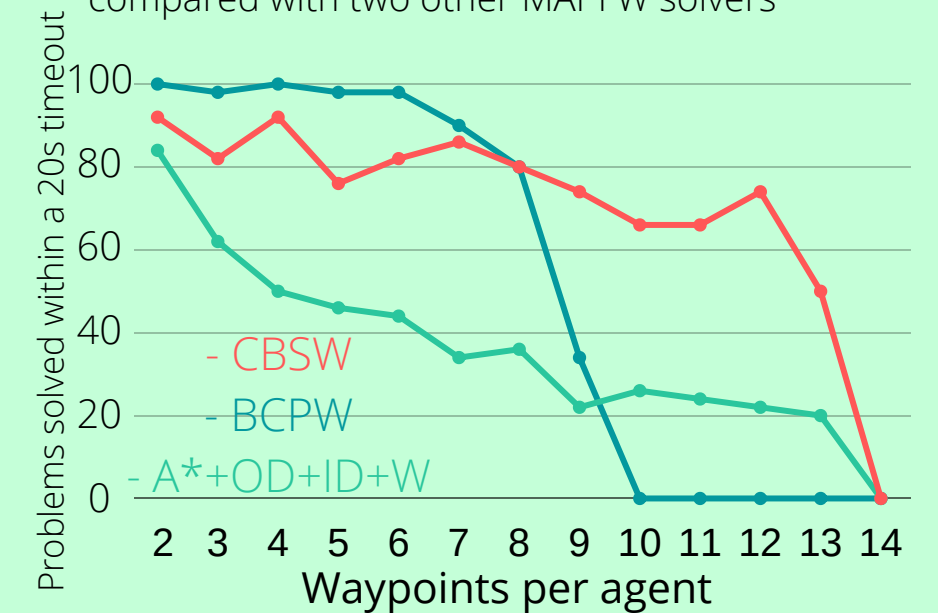


TSP based heuristics to order waypoints



The Results

Influence of the number of waypoints on the performance of CBSW compared with two other MAPFW solvers

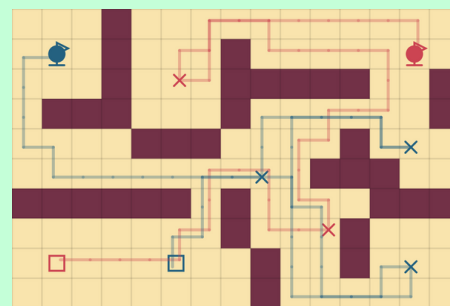


CBSW works well compared to other solvers when

- There are lots of waypoints per agent
- The mazes are large

Visit mapfw.nl to

- Get more MAPFW info
- See all benchmarks
- Make new benchmarks
- Test your own solver!



Optimizations

- Bypass optimization
- Corridor optimization

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