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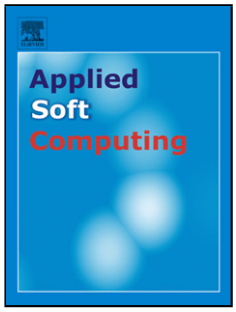

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ACCEPTED MANUSCRIPT

A Beam Search Approach for Solving Type II Robotic Parallel Assembly Line Balancing Problem

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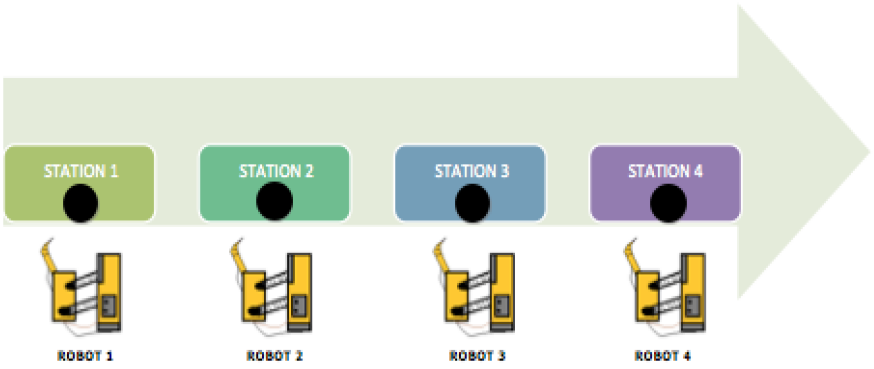
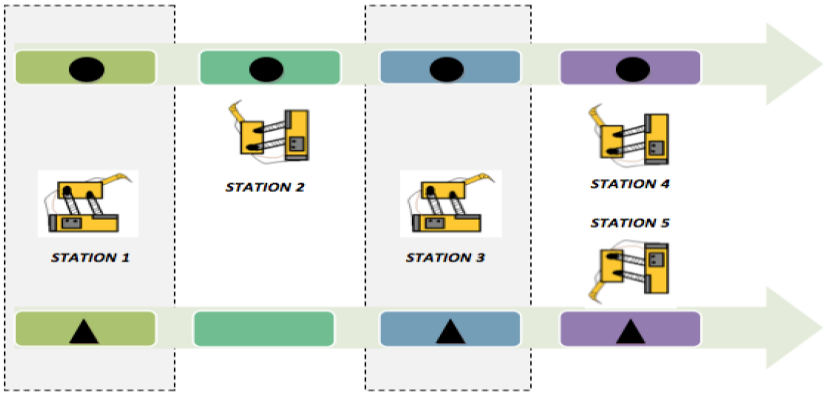
Graphical abstract



Robotic assembly line



Robotic parallel assembly lines

Highlights

- This is the first adaptation of beam search algorithm to solve the RALB problem
- This is the first study which models a parallel RALB problem.
- Three different heuristic approaches based on beam search are developed
- The algorithm was thoroughly tested on small and large sized instances
- Comparison with DE and PSO proves the superiority of the proposed method
- The algorithm provides near optimal solution for this NP-complete problem

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