



Motion Planning | Graph Search I

Autonomous Mobile Robots

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Graph construction | overview

- A graph $G(N, E)$ is characterized by
 - a set of nodes N
 - edges E connecting pairs of nodes
- Graphs for motion planning are commonly constructed from map or sensor data

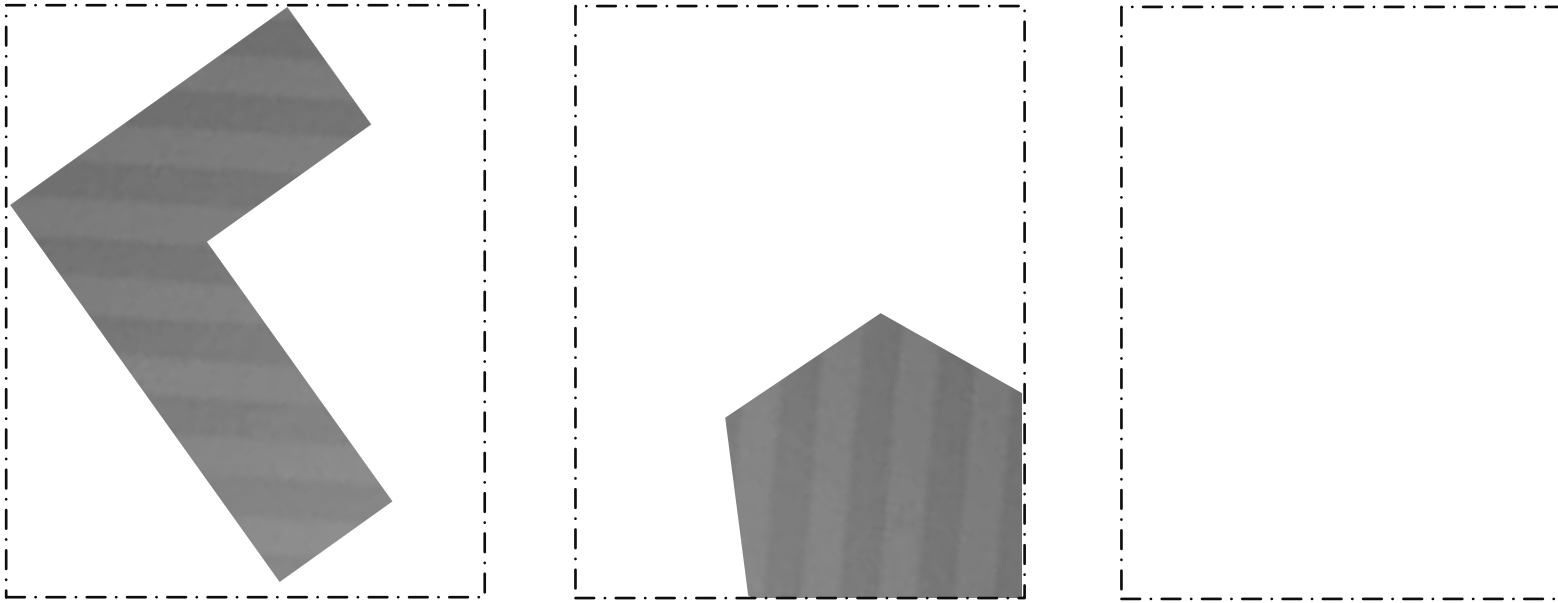


Graph construction | Grid and Lattice graphs

- Lattice graphs are largely independent of the workspace representation
- They overlay a repetitive discretization on the workspace

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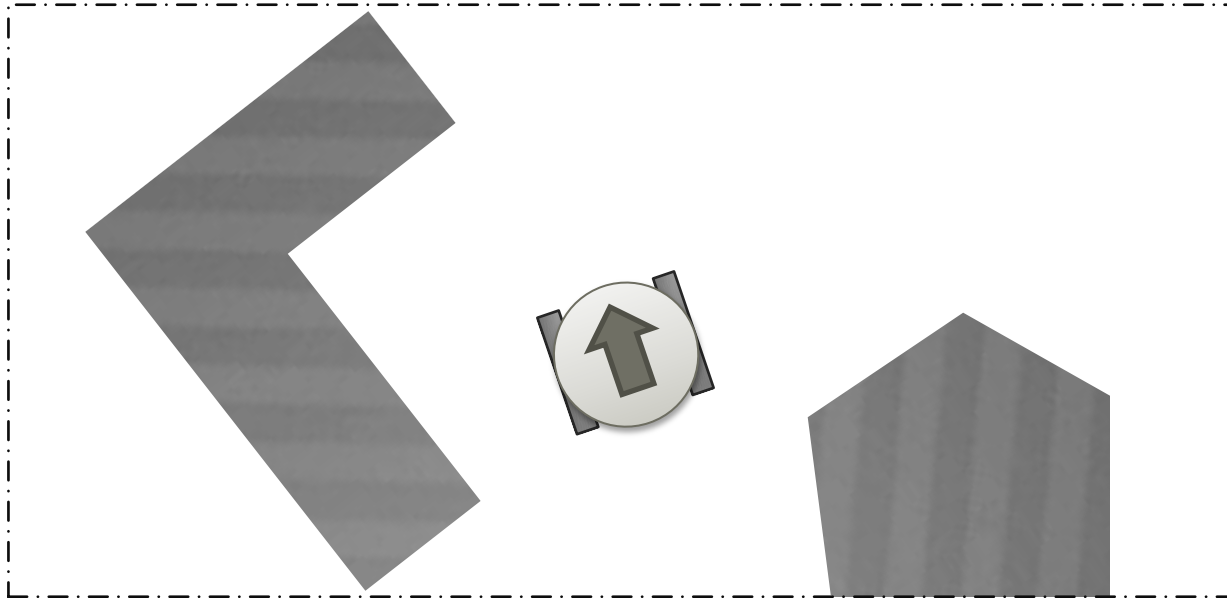


Graph construction | Visibility Graph

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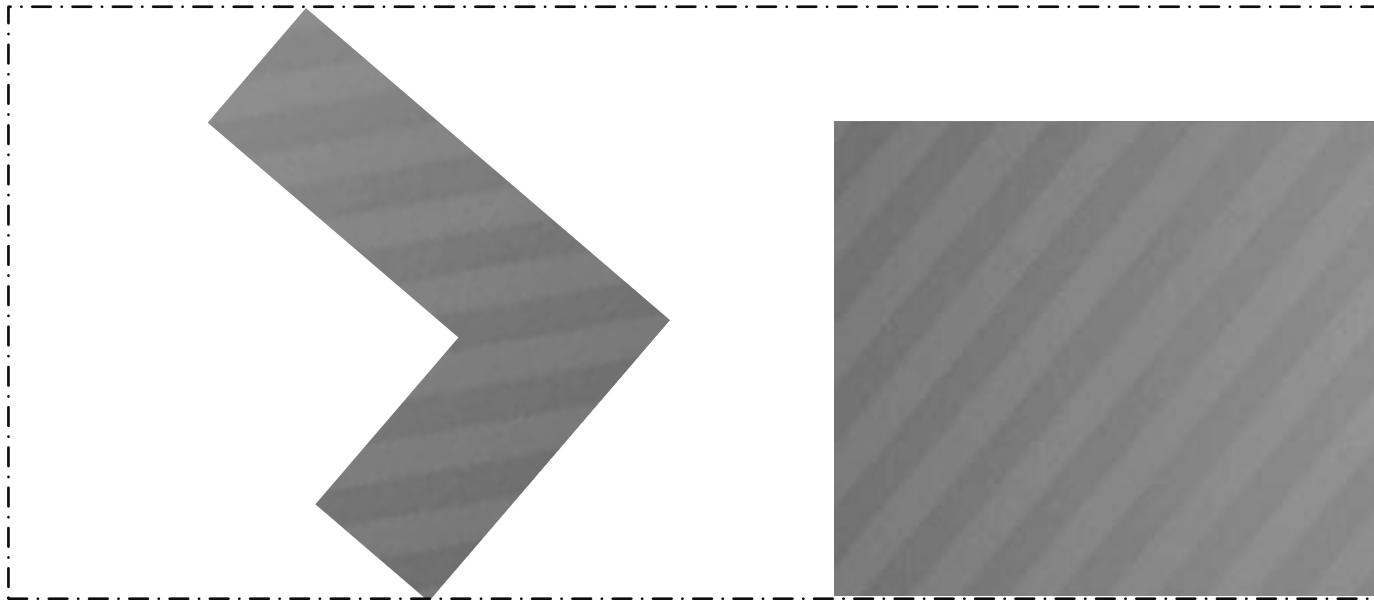
- Edges pass between objects and along object boundaries
- The method contains the shortest path sequence per construction
- The resulting graph size is a function of the obstacle count and shape
- Robot motion constraints are not considered

Graph construction | Voronoi Diagram

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