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Advances in Robot Path Planning

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Message from the Guest Editors

Path planning is fundamental and crucial for various kinds of robots, such as autonomous vehicles, multiple robots, or robot arms. It is crucial to generate a safe path without colliding with obstacles or other robots, in the case of path planning of multiple robots. Considering an aerial robot or underwater robot, the safe path must be planned considering the 3D environment. The complexity of path planning of a robot arm increases significantly as the number of degrees of freedom increases. Thus, safe paths must be generated for high-dimensional systems in a time-efficient manner. In practice, an obstacle may move and, thus, a robot's path must be replanned if necessary. Moreover, it is desirable to consider the dynamic model of a robot when generating a path for the robot. This Special Issue will present the recent research advances in these research topics.

Keywords

- Online and dynamic path planning
- Energy-efficient path planning
- Motion planning
- SLAM
- Coverage problem
- Mobile robots
- Multiple robots
- Robot arms
- Underwater robots
- UAVs

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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