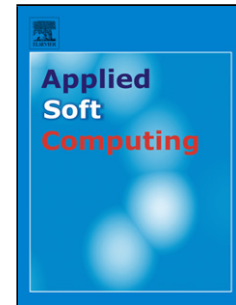


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A Hybridized Regression-Adaptive Ant Colony Optimization Approach for Navigation of Humanoids in a Cluttered Environment

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Highlights

- Determination of navigational parameters for humanoid path planning.
- Design of the RA and AACO navigational controllers.
- Design of hybrid RA-AACO controller using the logic of both RA and AACO.
- Design of a Petri-Net system for inter-collision avoidance.
- Testing of the navigational controller in both simulated and experimental environments.

Abstract

Humanoids are preferred over their wheeled counter parts because of their ability to replace human efforts. Navigation and path planning of humanoids is very much important and challenging area of investigation for robotic researchers to enable the humanoids for accomplishing tedious and repetitive tasks. In this paper, a novel hybridization scheme is attempted for the path planning and navigation of humanoids in a cluttered environment. Here, hybridization has been attempted on NAO humanoid robots using regression technique

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