

Evasion Of Multiple, Intelligent Pursuers In A Stationary, Cluttered Environment: A Harmonic Potential Field Approach

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Summary

In this paper an intelligent controller is suggested for the evasive navigation of an agent that is engaging multiple pursuers in a stationary environment. The controller is required to generate a sequence of directions to guide the motion of an evader so that it will be able to escape a group of pursuers while avoiding a set of forbidden regions (clutter). The focus here is on continuous evasion where the agent does not have the benefit of a target zone (e.g. a shelter) which upon reaching it can discontinue engaging the pursuers. The controller is constructed using an extension of the harmonic potential field approach to behavior synthesis. A preliminary demonstration of the controller's capabilities is provided using simulation.

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