



Evolutionary Autonomous VGSTV Staircase Climbing

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Résumé en anglais	<p>This paper introduces an originally designed tracked robot. This robot belongs to the VGSTV (Variable Geometry Single Tracked Vehicle) category, which is actually a sub-group of Variable Geometry Vehicles well represented by the iRobot Packbot. Those robots have been used several times for search and rescue mission and seems to be a real asset because of their clearing capability. After a brief categorization, technical specification of our robot are presented and geometrical and dynamical models are computed in order to compare static and dynamic balance. Then, thanks to the results of the balance study, an autonomous staircase clearing controller based on artificial neural network is computed and tested. A general conclusion about possible improvements and future work ends the paper.</p>
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