Abstract: An Expanded Levenshtein Distance Algorithm for Action Similarity Measurement of Virtual Characters

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Abstract

Virtual characters execute motions in the same order as a human through imitation learning. A maximin selection algorithm (maximizing the minimum differences) is used to compare the difference between two consecutive motions of virtual characters; however, the comparison is not accurate when the motions are generated in a slightly different order. This paper proposes a method based on the Levenshtein distance algorithm for calculating the differences between consecutive motions. We conducted experiments to determine the differences between similar consecutive motions and different consecutive motions generated during car driving. The experimental results verified the possibility of calculating the differences between two similar consecutive motions by considering only different parts of motions or by comparing actions with different number of motions.

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