Visual Computer

1.

@Article{Saini2018,

author="Saini, Rajkumar

and Roy, Partha Pratim

and Dogra, Debi Prosad",

title="A novel point-line duality feature for trajectory classification",

journal="The Visual Computer",

year="2018",

month="Jan",

day="29",

abstract="Trajectory classification is important for understanding object movements within the surveillance area. Raw trajectories are represented by object location in form of (x, y) coordinates. The length of trajectories varies in terms of number of points; thus, it is difficult to classify them into correct classes. The raw features extracted from trajectory do not yield satisfactory results in classification. Thus, robust features are needed that can efficiently represent trajectory sequences and help to improve the classification performance. In this paper, we present a new feature vector that is based on the concept of point-line duality (PLD) transformation, i.e., transformation of a trajectory point from its primal plane into a straight line in dual plane. Classification has been done using hidden Markov model (HMM) framework. We also propose a fusion approach combining classification results obtained from raw feature and PLD feature to improve the performance. Experiments have been carried out on raw trajectories with reduced lengths as well as adding Gaussian noise. Proposed approach has been tested on three publicly available datasets, namely T15, MIT, and CROSS. It has been found that the PLD feature outperforms existing features as well as raw feature when used in HHM-based classification. We have obtained encouraging results by feature combination at the decision level with 97, 96.75 and 99.80{\%} accuracy, respectively, on T15, MIT, and CROSS datasets.",

issn="1432-2315",

doi="10.1007/s00371-018-1473-2",

url="https://doi.org/10.1007/s00371-018-1473-2"

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2.

@Article{Li2004,

author="Li , Guiqing

and Ma , Weiyin

and Bao , Hujun",

title="{\textsurd}2 Subdivision for quadrilateral meshes",

journal="The Visual Computer",

year="2004",

month="May",

day="01",

volume="20",

number="2",

pages="180--198",

abstract="This paper presents a {\$}{\backslash}sqrt2{\$} subdivision scheme for quadrilateral meshes that can be regarded as an extension of a 4-8 subdivision with new subdivision rules and improved capability and performance. The proposed scheme adopts a so-called {\$}{\backslash}sqrt2{\$} split operator to refine a control mesh such that the face number of the refined mesh generally equals the edge number and is thus about twice the face number of the coarse mesh. Smooth rules are designed in reference to the 4-8 subdivision, while a new set of weights is developed to balance the flatness of surfaces at vertices of different valences. Compared to the 4-8 subdivision, the presented scheme can be naturally generalized for arbitrary control nets and is more efficient in both space and computing time management. Analysis shows that limit surfaces produced by the scheme are C4 continuous for regular control meshes and G1 continuous at extraordinary vertices. ",

issn="1432-2315",

doi="10.1007/s00371-003-0238-7",

url="https://doi.org/10.1007/s00371-003-0238-7"

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