

FAST MARCHING FOR ROBUST SURFACE SEGMENTATION

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ABSTRACT:

We propose a surface segmentation method based on Fast Marching Farthest Point Sampling designed for noisy, visually reconstructed point clouds or laser range data. Adjusting the distance metric between neighboring vertices we obtain robust, edge-preserving segmentations based on local curvature. We formulate a cost function given a segmentation in terms of a description length to be minimized. An incremental-decremental segmentation procedure approximates a global optimum of the cost function and prevents from under- as well as strong over-segmentation. We demonstrate the proposed method on various synthetic and real-world data sets.

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