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**Marilyn Vazquez Landrove\*** (Vazquez.marilyn.y@gmail.com), George Mason University. *A Manifold Learning Approach to Image Segmentation*

A novel approach to image segmentation is proposed that separates textures with minimal prior knowledge. The image is studied as a point cloud of sub-images (patches) that is clustered using the manifold learning framework. To achieve this, we apply the Continuous k- Nearest Neighbors (CkNN) algorithm, an efficient and accurate clustering algorithm, to a subcollection of patches selected by sample density. CkNN outputs clusters, each containing patches of a distinct texture. The remaining patches are classified according to the cluster labels of their nearest neighbors. Finally, each pixel is classified on the basis of patches containing it. We present results on synthetic examples and images from a scanning electron microscope.

Is this a preliminary report? Y or N (Received October 06, 2017)