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Abstract: Structure extraction is important for human perception. However, for various textured images, computers can hardly achieve this goal. Despite a plethora of studies to address the challenge, results from most previous methods contain unwanted artifacts and over-smoothed structures. Therefore, to address the weaknesses, we have proposed a variational model with end-to-end contour learning capability. Our formulation dwells in two observations: likelihood for representation of residual textures may be well abstracted using super Gaussian distribution, and edge metrics with semantic meaning may benefit structure preservation. The augmented Lagrangian method is adopted for optimal computation. Compared with classical approaches, our method offers a higher performance in structure extraction, including situations where the images have significant nonuniformity of the scale features.

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