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The Weight-Shape Decomposition of Density Estimates: A Framework for Clustering and Image Analysis Algorithms

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Highlights

- Every Parzen estimate of a probability distribution can be decomposed into Weight and Shape components in a unique fashion.
- This decomposition allows for a fresh classification of clustering algorithms, based on Probability (mean-shift), on Shape (quantum clustering), or on Weight (entropy maximization).
- These concepts can be applied to image analysis, with Shape providing novel aspects of generalized edge detection.

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