

Title: **Digital Curvelet Transform: Strategy, Implementation and Experiments**

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Abstract:

Recently, Candès and Donoho (1999) introduced the curvelet transform, a new multiscale representation suited for objects which are smooth away from discontinuities across curves. Their proposal was intended for functions f defined on the continuum plane \mathbf{R}^2 .

In this paper, we consider the problem of realizing this transform for digital data. We describe a strategy for computing a digital curvelet transform, we describe a software environment, `Curvelet256`, implementing this strategy in the case of 256×256 images, and we describe some experiments we have conducted using it. Examples are available for viewing by web browser.