

DIGITAL IMAGE PROCESSING (CS 663)

## Course Project

# Vector-Valued Image Regularization with PDEs: A Common Framework for Different Applications

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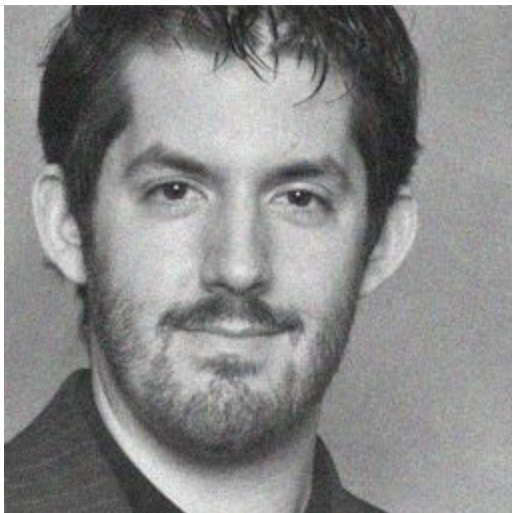
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## Applications

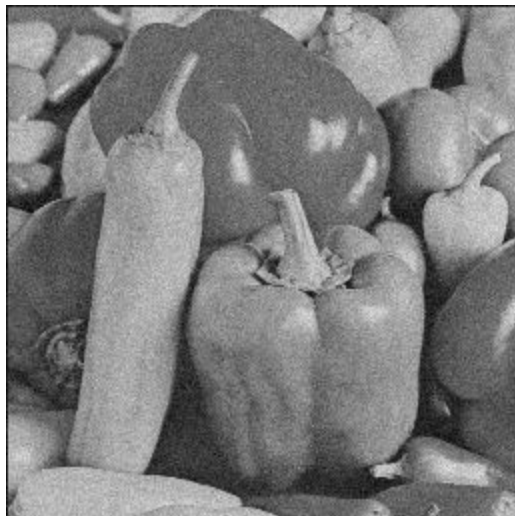
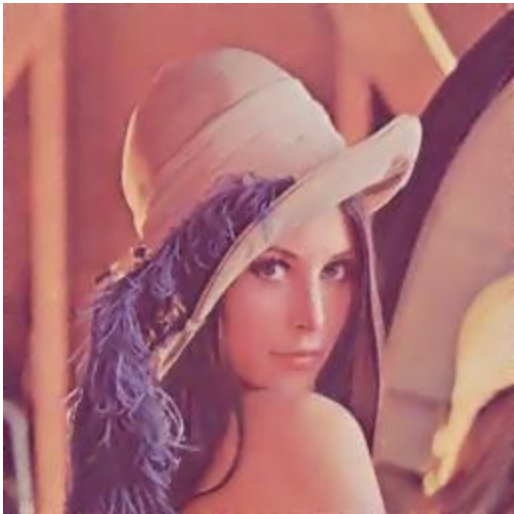
### Denoising

Noisy



Regularized







### Inpainting



(run till 200 iterations,20min)

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## Improvement of lossy compressed images

Compressed



Improved



### Observations

1. Keeping  $t$  *small* and using *large number of iterations* gives a smoother diffusion, which also follows from the theory.
2. For large noise images use *large sigma value for the gaussian* for smoothing the structure tensor.