Subject: Re: Singular Value Decomposition in 3 Dimensions
Posted by Mort Canty on Wed, 03 Sep 2008 11:46:29 GMT
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tomandwilltamu08@gmail.com schrieb:
> I am wondering how to do Singular Value Decomposition in 3 Dimensions
> in IDL. All of the canned routines seem to work only on 2D arrays.
>
> Specifically, I am trying to preform Principle Component Analysis on
> stacks of 2D images.
>
> For example, how can one preform an SVD on a 2048x2048xn array to get
> 2048x2048 principle components?
>
> Thanks much,
> -Will

SVD is a decomposition theorem for matrices (2D arrays). I think you may have an incorrect understanding of what principal (not principle) component analysis means. If you apply PCA to a stack of n 2048x2048 images, you will get n 2048x2048 principal component images. The n images will be uncorrelated and stacked in the order of decreasing variance.

Mort