

## Re: Threads: Mahalanobis distance and Visualising PCA

**Source:** <http://sci.tech-archive.net/Archive/sci.stat.math/2004-10/0422.html>

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**Date:** 10/25/04

Date: 25 Oct 2004 11:52:26 -0700

Paige Miller <[paige.miller@kodak.com](mailto:paige.miller@kodak.com)> wrote in message news:<[cliqq5\\$hg1\\$1@news.kodak.com](mailto:cliqq5$hg1$1@news.kodak.com)>...

> > *PS: As for Mahalanobis distance, I'm now convinced that this is*  
> > *inappropriate for my current data. I followed the advice given in a*  
> > *previous thread to drop one of the dimensions of my [compositional]*  
> > *data. This gave me a covariance matrix that I could easily convert,*  
> > *but tests on both toy and real data show that it performs worse than*  
> > *classifiers based on plain Euclidean distance. And, I tested this by*  
> > *including a run-time option in my program that over-wrote the*  
> > *covariance matrix with an identity matrix. Performance improves.*  
>  
> *You know, I NEVER SAID that you use Mahalanobis for classification*  
> *or discrimination. Your original question was about PCA, and*  
> *Mahalanobis is much better for PCA. It is not necessarily better for*  
> *discrimination.*

The PS: here was not meant to be on the same topic as the previous bit where I was discussing what you had written. I.e. I wasn't attributing recommendations to use Mahalanobis distance to you. It was some people here at wmin who had said that using Mahalanobis distance in classification in preference to Euclidean distance was a no-brainer.

Cheers,

Ross=c