THE TITLE HERE IN CAPS

by

My Name Here

A thesis submitted in partial fulfillment of the requirements for graduation with Honors in Mathematics.

Certificate of Approval

This is to certify that the accompanying thesis by (your name as it is to appear on the commencement program) has been accepted in partial fulfillment of the requirements for graduation with Honors in Mathematics.

My Thesis Advisor's Name, Ph.D.

Whitman College May 06, 2008

ABSTRACT OF THESIS

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My Name Here Whitman College May 2008

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1 Introduction

Sample text akldfjaljaf f lkjdhjlklk dlkjalk s jlkdjla lkjdljlf dlkjl lkajljl sample sample

We see a sample figure in Figure 1. This is sample text to explain the figure. The figure was generated in Maple as:

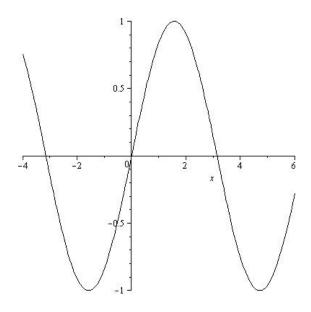


Figure 1: This is a sample caption. The sine figure was generated in Maple. See the text if you want to incorporate it.

plot(sin(x),x=-4..6,color=black)

then the files Sine.eps and Sine.jpg were both *exported* (right-click the figure in Maple). As of this writing (Sep 2009), all figures must be in black and white (for archival purposes).

2 Preprocessing Data

First we find the Singular Value Decomposition (SVD) of the matrix **X** whose dimensions are $m \times n$. sample sampl samplesample sample sam

2.1 Finding the Best Basis

The Basis Theorem allows us to take a multivariate data set and find a more compact representation. This means that if we have an $m \times n$ data set **X** sample samp

The Best Basis Theorem. Suppose that:

- X is an $m \times n$ mean-subtracted data matrix of m points in \mathbb{R}^n .
- $\bullet~\mathbf{C}$ is the covariance matrix of \mathbf{X}

Then the best k-element basis Φ of **X** is found by taking the first k eigenvectors of **C**, when arranged by eigenvalues from largest to smallest.

In his textbook, David Lay [2] gives an example of sample sample

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References

- The Mathworks Inc. (n.d.). Image types in the toolbox. In Image processing toolbox. Retrieved at http://www.mathworks.com/access/ helpdesk/help/toolbox/images/f14-13543.html.
- [2] D. C. Lay, *Linear algebra and its applications*. Addison Wesley, New York, NY 2003.