

Amath 482 Homework 3: PCA and a Spring-Mass System

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February 24, 2021

Abstract

I. Introduction and Overview

II. Theoretical Background

1. SVD

Data analytics is the current trend of mathematics

A is unitary or orthogonal, then the norm of the new vector is the same as the original

Rotation matrix never change the length of the vector

V - change of basis

Σ - stretch or compress

U - change of basis (rotation)