

# Biometric Security- Face Recognition

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## Abstract

In the modern world, sensitive data or access to buildings can be protected by more than just a key or a password. Biometric data unique to every human can be used to allow or deny access. The purpose of this project is to be able to create a "key" for any person who wishes to use the program. An image of the client's face will be taken and used as the base biometric key. When the client wishes authorization, a new picture of their face will be taken and compared to the base image. The program should be able to recognize the client and authorize him or her, while denying access to those not recognized.

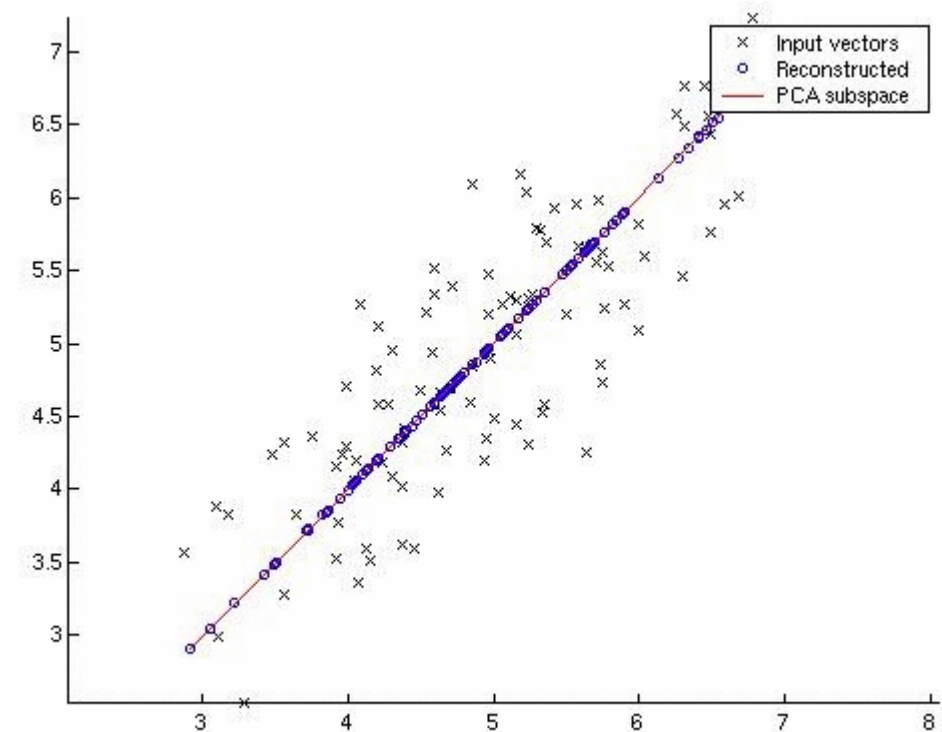


Fig 1: sample PCA output

## Algorithms

### Conversion

Converts a .ppm format file, which is a color image, into a specially formatted .pgm format.

### Pixel Subtraction:

Creates a third image which shows the obvious differences between two very similar images, with no analysis

### Mean Pixel Area Comparison:

Averages the pixel intensity in a specified area and compares that value to the average value in the same area on a second image.

### Interference Evaluation:

Evaluates how much interference or errant objects are in the image and tells you how reliable the results are.

I have created the framework for expanding into PCA. I need to create an algorithm in third quarter that will recognize the principal components in two images, so I can then run the Mean Pixel Area Comparison over those areas.

## Results and Conclusions

Coming soon

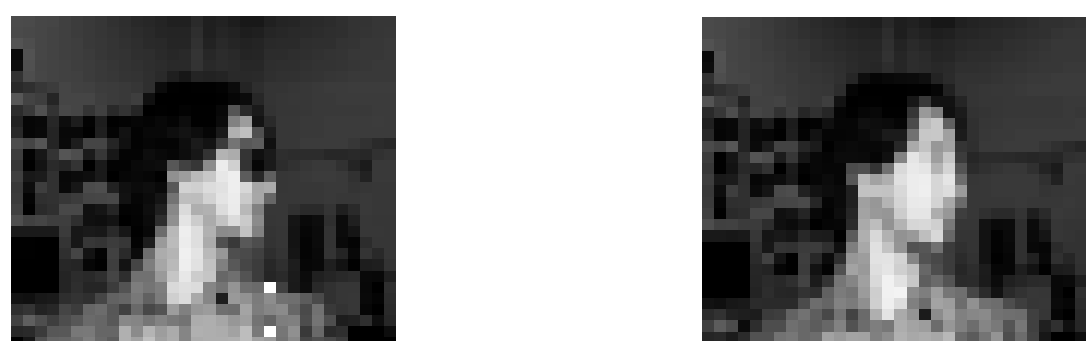


Fig 2: Sample training images