Dimensionality reduction

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1 Introduction

In a machine learning, it is really important to choose wisely the features, which will abstract the meaning of the image. In an image containing thousands of thousands pixels, you can use features like SIFT [4], Harris corner detection [1], parameters from a model where your pixels come from... The process of comparing a feature with another one is called **selection**. Another way to extract good feature is **projection** and this is the purpose of this article.

2 Projection of features

The key idea is to abstract all your data in a new dimension space. This dimension space will summarize the information in a new way. One widely known technic to do that is called principal component analysis (PCA) projection. Discovered by Pearson [3] and developed by [2], the goal is to extract the principal axes from a population, which has the largest variation. Imagine the cloud in figure, if you use the raw data, if you imagine new axis it wil be easier to work with it later

2.1 Memory

3 Conclusion

References

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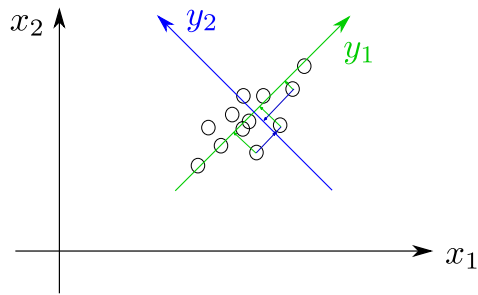
Fig. 1: Projections