# PCA

* High dimension data
  + What is high dimensional data.
* PCA
  + You observe high dimensional data but there’s a low dimensional explanation for that. Low dimensional hidden structures.
  + Least square error sub space approximation
* Robust PCA
  + Breakdown percentage
  + Treat noise and outliers as different.
* SVD
  + Non convex problem
  + Sensitive to outliers
    - Even one outlier can arbitrarility skew the output
* Applications
  + Data analysis
  + Image processing
  + Machine learning

## Ref

* PCA paper …
* Robust PCA paper
* Talk – robust pca
* ECkart and young – approximate the matrix by another matrix of lower rank…

# Good lines

* The theoretical guarantees are different for each of them…
* Machine learning, robust and adaptable optimisation, high dimensional statistics.
* According to his own preferences each of the paper presents a different view on topic.
* The essential feature was not so much the examples that were chosen but rather more or less explicit thesis that accompanied them.
* The two immediate consequences….
* The former attempts to study the topic in detail while the latter …