→ PCA (Principal Component Analysis)
↳ Pre-Processing
↓
Data Transformation

→ Not ML ✗

Vector-based Transformation ↳ help in reducing the dimensions / features
↓
Not deleting any feature but still we will be able to reduce

1000 - features → Transform → 20 features 90% → 10 fe

(100%) Info Data / Info loss (95%) Info

5% - 10% Info

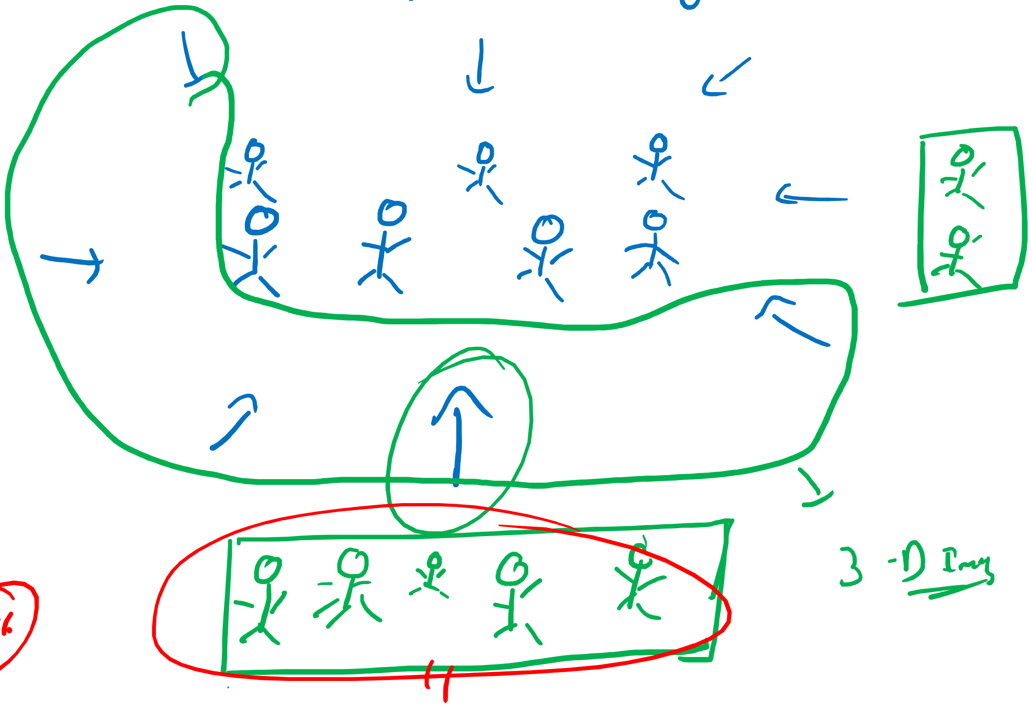
principal component ⇒ A photo of your Room from different walls

↙ vector projection

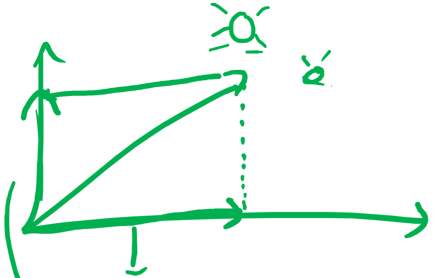
your group of friends

⇓

Trip → groupfie



3-D Image



vector projection

1000 features → 1000 PC

PC1 → 65%
PC2 → 20%
PC3 → 10%
} → 95%

PC4 → 1%
⋮
= 997 PC → 5%
PC1000 → 0.00001%

Steps to get PC(s)

1. Import your data
2. Standardize the data
3. Generate cov( ) matrix → d.f.cov() → [ ] → d x n of rel^n
4. Calculate the Eigen Vector & Eigen Value of this Cov Matrix
   - Eigen Vector ↓ some d x n
   - Eigen Value ↓ scalar
5. PC ⇒ dot product of Eigen Vector & Standardized features

   ||

   PC(s)