

Steps and explication

Step 1: Transpose the data into shape (999,18)

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | \ |
|-----|-------|-------|-------|--------|-------|-------|-------|-------|-------|-----|-----|---|
| 0 | 62.44 | 59.26 | 59.26 | 59.26 | 59.26 | 59.26 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 | |
| 1 | 71.62 | 73.12 | 67.04 | 60.75 | 60.75 | 60.75 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 | |
| 2 | 71.10 | 70.39 | 70.39 | 70.39 | 70.39 | 70.39 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 | |
| 3 | 64.74 | 73.51 | 73.51 | 73.51 | 73.51 | 73.51 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 | |
| 4 | 82.62 | 72.98 | 79.20 | 84.72 | 84.72 | 84.72 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 | |
| .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| 994 | 96.24 | 79.78 | 86.10 | 103.12 | 93.60 | 93.60 | 93.60 | 93.60 | 93.60 | 0.0 | 0.0 | |
| 995 | 91.84 | 84.39 | 78.61 | 103.02 | 84.56 | 78.39 | 78.39 | 78.39 | 78.39 | 0.0 | 0.0 | |
| 996 | 94.33 | 86.56 | 90.42 | 96.51 | 96.51 | 96.51 | 96.51 | 96.51 | 96.51 | 0.0 | 0.0 | |
| 997 | 85.70 | 91.19 | 77.48 | 83.58 | 74.42 | 82.61 | 82.61 | 82.61 | 82.61 | 0.0 | 0.0 | |
| 998 | 93.74 | 90.29 | 99.95 | 99.95 | 99.95 | 99.95 | 99.95 | 99.95 | 99.95 | 0.0 | 0.0 | |

| | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| .. | ... | ... | ... | ... | ... | ... | ... |
| 994 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 995 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 996 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 997 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 998 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

[999 rows x 18 columns]

Step 2: Apply PCA

Step 3: Using Elbow method, I choose number of clusters = 8

confused about the meaning of color , but I thought that the KMeans only able to say whether this group of data belong to which session because our data have nothing relate to emotion . That is the reason I put the legend as session, for example here the KMeans indicate that the blue data belong to session 1 and violet belong to session 4 .

