

Observation

Similarity of documents: Cosine distance provides better accuracy (80-90%) than Euclidean distance(60%).

Best result appeared with k=4 and k=6 with accuracy of 90%. Following are the full details :-

K= 4, distance=Cosine

KNN:-

Predicted labels

2 2 2 0 1 1 0 0 1 1

True labels

2 2 2 2 1 1 0 0 1 1

Accuracy: 90.0%

Precision for category 2 = 1.0

Precision for category 1 = 1.0

Precision for category 0 = 0.9

Recall for category 2 = 0.75

Recall for category 1 = 0.875

Recall for category 0 = 0.9

Fuzzy KNN:-

Document:1 Category:0 0.0% Category:1 0.0% Category:2 100.0%

Document:2 Category:0 0.0% Category:1 0.0% Category:2 100.0%

Document:3 Category:0 25.0% Category:1 0.0% Category:2 75.0%

Document:4 Category:0 100.0% Category:1 0.0% Category:2 0.0%

Document:5 Category:0 0.0% Category:1 100.0% Category:2 0.0%

Document:6 Category:0 0.0% Category:1 100.0% Category:2 0.0%

Document:7 Category:0 100.0% Category:1 0.0% Category:2 0.0%

Document:8 Category:0 100.0% Category:1 0.0% Category:2 0.0%

Document:9 Category:0 0.0% Category:1 75.0% Category:2 25.0%

Document:10 Category:0 0.0% Category:1 50.0% Category:2 50.0%