SYLLABUS

UNSUPERVISED MACHINE LEARNING WITH PYTHON-SEM 5

UNIT I: FUNDAMENTALS OF UNSUPERVISED LEARNING AND CLUSTERING TECHNIQUES

Clustering: k-means clustering algorithm, Improving cluster performance with post processing, Bisecting k-means, Example:clustering points on a map

UNIT II: ASSOCIATION ANALYSIS AND THE APRIORI ALGORITHM

Association analysis Apriori algorithm: Association analysis, The Apriori principle, Finding frequent item sets with the Apriori algorithm, Mining association rules from frequent item sets, uncovering patterns in congressional voting

UNIT III: MINING FREQUENT ITEMSETS WITH FP-GROWTH ALGORITHM

Finding frequent item sets: FP-growth -FP trees, Build FP-tree, mining frequent from an FPtree, finding co-occurring words in a Twitter feed, mining a click stream from a news site.

UNIT IV: SINGULAR VALUE DECOMPOSITION AND RECOMMENDATION SYSTEMS

Principal component analysis: Dimensionality reduction techniques, using PCA to reduce the dimensionality of semiconductor manufacturing data

UNIT V: SINGULAR VALUE DECOMPOSITION AND RECOMMENDATION SYSTEMS

Singular value decomposition: Applications of the SVD, Matrix factorization, SVD in Python, Collaborative filtering-based recommendation engines, a restaurant dish recommendation engine