Machine learning

Course Outcome:

At the end of this course, students will be able to:

1. Analyze and evaluate machine learning clustering algorithms using combinatorial algorithms, mixture modeling, and mode seekers at the synthesis level of Bloom's Taxonomy.

2. Apply dimension reduction techniques such as principal component analysis, independent component analysis, and factor analysis in machine learning problems with a high level of understanding and evaluation.

3. Understand and explain the Page Rank algorithm used by Google search engine at the comprehension level of Bloom's Taxonomy.

4. Identify and describe the challenges of high dimensional data and the curse of dimensionality at the knowledge level of Bloom's Taxonomy.

5. Implement association rules, market basket analysis, and generalized association rules for learning from association at the application level of Bloom's Taxonomy.

6. Utilize support vector machines and regression for maximal margin classification and regression with a high level of understanding at the synthesis level of Bloom's Taxonomy.

7. Implement and compare tree-based methods such as bagging, random forest, boosting, and additive trees for supervised learning at the application level of Bloom's Taxonomy.

8. Understand the basics of machine learning on cloud, including characteristics, delivery and deployment models, platforms, and deployment using Flask on AWS, with the ability to analyze and evaluate at the synthesis level of Bloom's Taxonomy.