Artificial Intelligence

And Machine Learning Lab (CC3230)

Lab File

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| **Sno.** | **Name of the experiment** | **Remarks** |
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| 4 | Write a program to implement A\* search algorithm |  |
| 5 | Write a program to solve some real-world problem using constraint satisfaction |  |
| 6 & 7 | Write a program to Implement Simple Linear and Logistic Regression. |  |
| 8 | Write a program to implement the Bayes Classifier and SVM Classifier |  |
| 9 | Write a program to implement Decision Tree Algorithm |  |
| 10 | Write a program to implement k-Nearest Neighbours |  |
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| 13 | Write programs to Implement the Perceptron Algorithm  Write a program to implement the Backpropagation Algorithm |  |

**Program 1 & 2**

**Introduction to Python**

AIM: Brief introduction about fundamentals of Python programming to make student familiarize with basic building blocks of Python.

Includes the basics of the following:

* Input/Output
* Basic data structures
* If-Else paradigm
* While loop
* For loop
* Operators
* Bitwise operations
* String operations

**Program 3**

**Program to implement hill**

**climbing search algorithm.**

AIM: Write a Python code to implement Hill Climbing Search Algorithm specifically to solve Travelling salesman problem.

**Program 4**

**A\* Search Algorithm**

AIM: Write a Python code to implement A\* Search Algorithm specifically to solve 3X3- 8 Puzzle problem.

**Program 5**

**Constraint Satisfaction Problem**

AIM: Write a Python code to solve some algebraic relations using constraint satisfaction.

**Program 6 & 7**

**Linear Regression & Logistic Regression**

AIM: Write a Python code to implement linear and logistic regression concept for binary classification.

**Program 8**

**Bayes’ and SVM Classifier**

AIM: Write a Python code to implement Bayes’ and SVM Classifier for classification.

**Program 9**

**Decision Tree classifier**

AIM: Write a Python code to implement Decision tree classifier.

**Program 10**

**K-Nearest Neighbour**

AIM: Write a Python code to implement K-Nearest Neighbour classifier.

**Program 11**

**K-Means Algorithm**

AIM: Write a Python code to implement K-Means clustering algorithm.

**Program 12**

**Principal Component Analysis for dimensionality reduction**

AIM: Write a Python code to implement Principal component analysis for dimensionality reduction.

**Program 13**

**Perceptron and Backpropagation algorithm**

AIM: Write a Python code to implement Perceptron and Backpropagation algorithm.