**Module 3**

**Assignment 4**

This assignment will be addressing the concepts of Decision Trees. Using the data set ‘Social\_Network\_Ads.csv’, build a Decision Tree model to predict the purchase would happen or not.

**Data Split**: Split the data into Train and Test using (75:25 ratio)

**Variable Description:**

User ID - User’s Unique ID

Gender - Gender of the user

Age - Age of the user

EstimatedSalary - Estimated salary of the user

Purchased – Whether the user made a purchase or not

Please answer/execute the following questions/tasks:

**Questions/Tasks:**

1. Check the accuracy of the model
2. What is the % of Type II error?
3. Calculate Cross-Entropy for the built model and interpret the same
4. Calculate Gini Index for the built model and interpret the same
5. Create a plot that shows the decision tree on training set and test set

**Duration**: 3 hours