Jordan Shartar
Jshartar6
903131050

Q7: For each of the two real datasets that come with this project, explain how their Decision Trees could be used along with other software (another algorithm, or a userfacing GUI) to solve some problem. For the cars dataset, you should suggest a similar dataset and analyze how having a classifier such as a Decision Tree could be useful to something like a website selling products. For the Connect4 dataset, suggest some way in which the classifier could be incorporated with one of the past algorithms we have learned about to make a better Connect4 playing bot. You should discuss both for several sentences, and concretely describe what the dataset could contain and how the corresponding Decision Tree could be used to solve the given problem.

ANSWER:

Connect 4 dataset: For the connect 4 dataset, a minimax algorithm should be used. Connect 4 is a game played by two players where the first person to connect 4 of their pieces together wins. The minimax algorithm use backtracking in its decision making to find the optimal move for the ai player. It uses a maximizer to get the highest score possible, while using a minimizer to get the lowest score possible based on a heuristic given to the ai. There will be 69 combinations of winning connect 4 which should each be an attribute of for the dataset. Thus using this minimax algorithm, it should give a result from the decision tree that wins the game without wasting as much time as the original algorithm used.

Car dataset: For the car dataset, the data contains features of car that would be useful when classifying specific features of cars for a potential buyer. A car dealership would use this decision tree to help decide which car is best for what a buyer wants. After testing with a large dataset of many different cars with varying features the decision tree can learn which car model is best when used in the testing (what a car buyer would want).