

COMP 6721: Artificial Intelligence

Decision Trees

Question 1 Given the training instances below, use information theory to find whether ‘Outlook’ or ‘Windy’ is the best feature to decide when to play a game of golf.

| Outlook | Temperature | Humidity | Windy | Play / Don't Play |
|----------|-------------|----------|-------|-------------------|
| sunny | 85 | 85 | false | Don't Play |
| sunny | 80 | 90 | true | Don't Play |
| overcast | 83 | 78 | false | Play |
| rain | 70 | 96 | false | Play |
| rain | 68 | 80 | false | Play |
| rain | 65 | 70 | true | Don't Play |
| overcast | 64 | 65 | true | Play |
| sunny | 72 | 95 | false | Don't Play |
| sunny | 69 | 70 | false | Play |
| rain | 75 | 80 | false | Play |
| sunny | 75 | 70 | true | Play |
| overcast | 72 | 90 | true | Play |
| overcast | 81 | 75 | false | Play |
| rain | 71 | 80 | true | Don't Play |