

Poker Rule Induction

Determine the poker hand of five playing cards

The intent of this challenge is automatic rules induction, i.e. to learn the rules using machine learning, without hand coding heuristics.

We are provided with 25,010 poker hands in train.csv and 1,000,000 in test.csv. Each hand consists of five cards with a given suit and rank, drawn from a standard deck of 52. Suits and ranks are represented as ordinal categories:

S1 "Suit of card #1"
Ordinal (1-4) representing {Hearts, Spades, Diamonds, Clubs}
C1 "Rank of card #1"
Numerical (1-13) representing (Ace, 2, 3, ... , Queen, King)
...
S5 "Suit of card #5"
C5 "Rank of card #5"

Each row in the training set has the accompanying class label for the poker hand it comprises. The hands are omitted from the test set and must be predicted by participants. Hands are classified into the following ordinal categories:

0: Nothing in hand; not a recognized poker hand
1: One pair; one pair of equal ranks within five cards
2: Two pairs; two pairs of equal ranks within five cards
3: Three of a kind; three equal ranks within five cards
4: Straight; five cards, sequentially ranked with no gaps
5: Flush; five cards with the same suit
6: Full house; pair + different rank three of a kind
7: Four of a kind; four equal ranks within five cards
8: Straight flush; straight + flush
9: Royal flush; {Ace, King, Queen, Jack, Ten} + flush

Note that the Straight flush and Royal flush hands are not representative of the true domain because they have been over-sampled. The straight flush is 14.43 times more likely to occur in the training set, while the royal flush is 129.82 times more likely.

Encl:

baseLinefinding.ipynb for detecting best model

modelPrediction.ipynb MLPclassification (wish my computer, like DGX-1 must got 1.0000)

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