Page :
Date : / /

Tutorial 1

A) Tic Tac Toe

First Approach

→ The game consists of a nine element vector called Board, representing the number from 1 to 9 in 3 rows.

→ Here, 0 → Blank
1 → X
2 → O

→ Move table: It is a vector of 3^9, i.e., 19683 elements, each element of which is a nine element vector.

Index	Current Board	New Board
0	000000000	000010000
1	000000001	002000001
2	000000002	000100002
3	000000010	002000010
⋮		

Algorithm to make a move:

i) View vector board as a ternary number & convert it into decimal number.
ii) Use number computed in above step as an individual into movetable and access the vector stored there.

iii) The vector selected in step(ii) represents the way the board will look after the move threat should be made to set board equal to the vector.

Advantages

→ Very efficient in time and in theory, it could play an optimal tic-tac-toe game.

B) Question Answering

Convert the question to a structured form using English know-how this step includes the identification of the main verb, subject & object of the sentence. Use a marker to indicate the substring of the structure the should be returned as an answer match the structured form against the structured test, this step is used to find the segments of the text that match the structured form of the question.

Return the requested segments of the question as the answer.

This approach can be useful in natural language processing tasks such as question answering.

Page :
Date : / /

Another approach

The first step is to convert the question to as structured form using both the knowledge contained in above method, the world model.

This step generated more possible structures by using more knowledge which can help to improve the accuracy of the question answering system.

Next step is to use the world model to resolve any ambiguities that may occur. The world model can help to disambiguate words, phrases or concepts in the question making it easier to find the correct answer.

c) Language Translation

AI based language translation, RBMT rule based machine translation. This approach uses a set of pre-defined rules & dictionaries to translate text from one language to another.

The rules are created by human experts and are based on the grammar, syntax and vocabulary of the language involved. The dictionaries are used to look up

words & phrases in the source-language & find their equivalents in the target language.

RBMT system first tokenises the input sentence into individual words & phrases, then uses the rules & dictionaries to translate them, one by one.

→ Less complex than neural machine translation. Less accurate as well because it relies on predicted rules and dictionaries.

→ RBMT is language dependant, not suitable for low resource language.