

Assignment - 5

Natural Language Interface

I have built a natural language interface in python. The input data is preprocessed using nltk library (NLP) and the required facts are created as required by the prolog script. I have created a new .pl file of facts to run the prolog file. And use this file in the prolog code.

This NLP Interface helps in predicting the Electives for MTech at IIIT Delhi.

For running the script, the user needs to follow the mentioned steps:

1. Run all the cells of the Jupyter Notebook. It will ask the user for his specialization. Once the specialization is entered, it will ask for the interest on a scale of 0 to 5.

Information Security specialization

MTech Elective Advisory System 2022

This Prolog script helps in choosing your Electives for MTech curriculum at IIIT Delhi

The advisory is generated using your level of interest in a particular domain

-> Artificial Intelligence

-> Data Engineering

-> Information Security

-> No Specialization

Can you tell me one of the four specialisation that you are thinking to take ?Information security

Thank You for selecting your Specialization

As a final step, please enter your interest in the selected domain.

Enter a value from 0 to 5, 0 meaning no interest and 5 meaning highly interested:

0 - No interest

1 - Low interest

2 - Medium interest

3 - High interest

4 - Very high interest

5 - Completely intrigued and fascinated

Amount of knowledge in Data Structure and Algorithms3

Amount of knowledge in Computer Network4

Amount of knowledge in Operating System4

Amount of knowledge in Discrete Mathematics3

Have you done any Computer Network Courseyes

Amount of knowledge in learn about three basic principles of Modern Cryptography?4

Amount of knowledge in learn cryptosystems based on block ciphers, stream ciphers, public-key cryptosystems, key management, and digital signatures?5

Amount of knowledge in learn about Security notions, adversary powers, Perfect security, Message authentication, Public key cryptography?4

Amount of knowledge in various privacy and security concerns (spam, phishing, fraud nodes, identity theft) on Online Social Media?3

2. Once the inputs are given in the notebook, the corresponding facts will be generated for the prolog script.

```
1 special('Information Security').
2 subgen1(3).
3 subgen2(4).
4 subgen3(4).
5 subgen4(3).
6 cour('Y').
7 sub1(4).
8 sub2(5).
9 sub3(4).
10 sub4(3).
11
```

3. Consult the main.pl file in Prolog Software, and then type : ?- start. The prolog script will use the generated facts and suggest the electives as shown.

```
List of electives
TMC
NSC
AC
PSOSM
true ■
```

Trying the same on another set of inputs.

Data Engineering specialization

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-> Artificial Intelligence

-> Data Engineering

-> Information Security

-> No Specialization

Can you tell me one of the four specialisation that you are thinking to take ?Data engineering

Thank You for selecting your Specialization

As a final step, please enter your interest in the selected domain.

Enter a value from 0 to 5, 0 meaning no interest and 5 meaning highly interested:

0 - No interest

1 - Low interest

2 - Medium interest

3 - High interest

4 - Very high interest

5 - Completely intrigued and fascinated

Amount of knowledge in Data Structure and Algorithm4

Amount of knowledge in Database Management4

Amount of knowledge in Graphical Representation3

Amount of knowledge in Linear Algebra4

Amount of knowledge in Statistics3

Amount of knowledge in Model real-world problems, apply different learning techniques and quantitatively evaluate the performance?4

Amount of knowledge in topics relating to components of a Database System including file structures, transactions, concurrency control, recovery?4

Amount of knowledge in design and analyse algorithms using techniques like divide and conquer, greedy and dynamic programming?3

Amount of knowledge in learn techniques designed to be used for finding interesting patterns from data?4

Amount of knowledge in get hands-on experience on designing different real-world NLP models?4

Amount of knowledge in get hands on learning for the development life cycle of a data warehouse?3

Facts

```
1 special('Data Engineering').
2 subgen1(4).
3 subgen2(4).
4 subgen3(3).
5 subgen4(4).
6 subgen5(3).
7 sub1(4).
8 sub2(4).
9 sub3(3).
10 sub4(4).
11 sub5(4).
12 sub6(3).
13
```

List of electives

ML

DBSI

GA

NLP

DW

true