CSE643: Artificial Intelligence

Assignment-1

Due date: 15-Sept-2021, 11:59PM **Marks: 7**

1. Create an electives advisory / prediction system in Prolog for BTech or MTech or PhD students of IIITD. It needs to advise a student on what electives to take given the career they want to pursue and the pre-requisites that they have done.
2. Advisory system here refers to a system that will take some inputs from the student and ask further questions to narrow down choices and then suggest to the student the appropriate electives. Prediction system here refers to a system that will take all inputs and then suggest to the student a list of choices with some ranking. DO NOT build a machine learning system here. We need you to write Prolog clauses and show explicit knowledge representation and reasoning.
3. You are free to make your own rules regarding career and assert your own facts. For example, you can consider Subjects, Marks, Grades, Extra-curricular activities, Interest areas, Aptitude, Opportunities, Projects done, BTP/MTP/dissertation/thesis, Extra credits, Extra courses done etc. (you are free to choose what you want and name it the way you want or even create new parameters).
4. Take data from the electives options that students have for various streams in IIITD.
5. You should use Prolog features such as Lists, Input/ Output, Recursion, Backtracking etc.
6. Should work for different inputs for different students. That is don't make it hard-coded for one student input.
7. Make your own prediction / advisory system. Make it as good as you can, but the advise/ prediction should be useful and practical.
8. You are free to make the program as interesting and as complex as you want – or you can keep it of moderate complexity (don't make it simple as that will not demonstrate your Prolog understanding and skills; and also it really won't have any reasoning so will not be a good "AI" program; and will not fetch you marks).
9. Use of some inputs from references below can be useful for an effective prediction / advisory system. However, you are not bound to use it.
10. Prolog program should work as marks will be based on the working demo of the program and your explanation of the program.
11. Marks will be awarded for the assignment as follows: Working program (2 marks), complexity of the program / kind of Prolog features used (3 marks -- to award marks for

non-trivial programs), kind of advice generated (1 mark), ingenuity used (1 mark). Demonstrate the program to your assigned TAs.

12. You should submit a ZIP file consisting of the program and a pdf file listing the program and sample screenshots of its working. Name the ZIP file as: AI-A1-<Name>-<RollNo>

References that may be useful in planning career related electives.

1. https://iiitd.ac.in/sites/default/files/docs/placements/2020/Placement%20Brochure%202020-21.pdf
2. https://www.prospects.ac.uk/job-profiles/data-analyst
3. https://www.northeastern.edu/graduate/blog/career-in-artificial-intelligence/
4. https://jobs.smartrecruiters.com/BoschGroup/743999716898847-phd-combined-reasoning-and-learning-approaches