CS 6374: Project Suggestions

Gopal Gupta

1. Movie Recommendation System: Based on knowledge about a person's preferences and hobbies, information about movies, come up with rules to determine the movies that a person may like. Information about movies can be gotten from a movies database.
2. Birthday gift advisor: Based on knowledge about a person, knowledge about liking of people in general, etc., design a system that will recommend a gift for your friend/relatives. (Information about the person may come from Facebook, for example; so this could be a facebook app).
3. Pick a narrow domain, e.g., a convenience store, and model the knowledge that a human will need to work inside the convenience store (this knowledge serves as the "brain" of a robot).
4. Based on the network log, determine if there is suspicious activity going on, just as a system administrator would. (You are modeling the mind of a network administrator who is monitoring the network for threats).
5. A system for playing a card game (e.g., Poker)
6. Take a narrow topic in Chemistry, Physics, or Biology, and code that knowledge using ASP. Your system should be able to answer questions posed as ASP queries.
7. Simulate an automated driving system. Assuming that there are signals that are coming from various sensors (in the car, from the road/surroundings), write a set of rules that determine the next driver action.
8. Take a narrow area of law, and automate its application. For example, laws governing leasing and subleasing of apartments. You will simulate the laws with ASP rules, then given the description of a case (as facts), determine who is at fault (the landlord or the tenant).
9. Automate problem solving in some area of mathematics. E.g., a narrow class of linear algebra problems, or high school level problems around object falling under the influence of gravity, etc.
10. End game in chess, automating checkers playing, etc.
11. Diagnosing and fixing problems in cars; Diagnosing and fixing problems in networks; diagnosing and fixing problems in any given area.

12. Codifying stock-investing knowledge.
13. Codifying rules for balancing a stock portfolio.
14. Codifying an area of medicine (see the CHF paper on my home page).
15. Simulate the thinking process of an expert in any field. You will simulate the knowledge that resides in the expert's mind.
16. Assume you have a system with sensors (e.g., a traffic intersection; smart home), where these sensors are sending signals. Design the rules that determine what actions should be taken based on sensor inputs.
17. A system for simulating orthodontists expertise (contact me for details, if you are interested);

Your general approach should be to first write the rules in English, then code them in ASP. You should run your system using the s(ASP) system. Download s(ASP) from sourceforge: https://sourceforge.net/projects/sasp-system/

For projects that use just Prolog, you can use SWI Prolog. For projects that use CLP, please use SICStus Prolog.