Overview:
One of the goals of this class is for you to become familiar with the literature and current research topics of AI, along with some concrete examples of ongoing AI projects. Another of the goals is for you to become aware of both the possibilities and the problems incumbent in AI research. This assignment is designed with these goals in mind. For this assignment, you will first select an AI research project that relates to the topics that we are covering in class. For each research project, several papers will be selected. You will read the papers and produce a report on the research project (the required contents of the report are described in further detail below). During each of the lecture periods listed on the schedule, a project summary will be presented to the class.

There is a wealth of AI resources at http://aitopics.org. I would really like your selected project to be something that interests you. If there's an area that you're interested in that isn't represented in the provided resources, please let me know – I will work with you to find a relevant project for you to use. Also, feel free to do independent research to find interesting projects. If you find something that you're interested in, and there's enough information available on the project, you can use certainly use it. So please don't feel constrained in your selection.

Project selection and scheduling must be completed by Wednesday, Feb 1st at noon (by the end of lab period).

Required Contents:
Your report must contain the following sections:
1. Detailed description of the project – this description should provide enough detail for someone who has not read papers about the project to understand the goals, architecture and utilized technology of the project.
2. Contributions – this section should enumerate and explain the contributions of the project. Each research project that we will be examining "pushes the envelope" in some way and advances the field of AI. What are the areas where this occurs in this project?
3. Limitations – each paper that you read will contain a lot of positive claims about the value of the project. It's part of the author's job to sell the paper to the reviewers and readers. In this section of the paper, I want you to do some critical thinking about the project that you're examining. Take a few steps back and think about the limitations or shortcomings of the approach. How far away is the research from making real contributions?
4. Conclusion – in this section of the report, I want you to share your opinions on this research. Is it an interesting area to you? Is it what you expected when you first heard or read the description of the project?
What conclusions does this project make you draw about the future possibilities or problems in AI research?

5. Bibliography – this section should include the references of the papers that you read in order to complete your report.

**Length requirements:** 10 double-spaced pages (2500 words)

The first version of your written report is due at the beginning of class on the day that you’re scheduled to give your class presentation. I will give you recommended and required changes, and you must submit the final version within a week of receiving my comments. **The rough draft must be a complete draft, meeting the length requirements!**

In the presentation, I want to hear a clear presentation of the major points in your report (PLEASE – don’t read your report! That would be too much detail!) Come ready to share what you’ve learned and answer any questions that the class might have. Your presentation and report should be sure to emphasize the aspects of the project that relate to the topic we’re covering in class (learning, planning, neural nets, etc.)

**Grading:**
Project selection and scheduling/Rough draft completion: 10%
Presentation: 15%
Final paper: 75%

**Schedule:**
Notice that I do want to have the reports spread throughout the semester, so that each topic that we cover in class is linked to a concrete example of AI research. This means that there is a maximum number of “slots” per topic. There is, however, a lot of overlap between topics. So, for example, if you’re interested in Natural Language Processing and don’t manage to get one of those slots, we can probably find an NLP project that addresses learning or planning or whatever other area is available on the schedule. If you know that you’re definitely interested in a particular area (or a particular date!), see me as soon as possible to reserve that slot. You don’t need to have identified your project to schedule a slot.

**Broad Topics:**
- Heuristic/Adversarial Search
- Reasoning under Uncertainty
- Machine Learning
- Planning
- Multi-agent systems
- Neural Networks
- Bayesian Networks
- Artificial Life/Genetic Algorithms
- Natural Language Processing
- Robotics/Machine Vision