CS4701 Fall 2011: Practicum in Artificial Intelligence

Project Proposal and Pre-proposal

Due Date: Pre-proposal and oral presentation due to TA (by email) Tuesday, September 13, 2010
Final proposal due on CMS for grading September 16, 2010
See website for more info

Topic. This year the AI practicum will focus on writing code to play modified Chinese Checkers (see website for information).

Proposals. Your project proposal outlines the goals and scope of your implementation. We strongly urge you to discuss your project with your assigned TA BEFORE finalizing your project proposal. The TA will be able to help you write a better proposal and will be an invaluable resource in helping to guide your project along. You will be emailed your assigned TA once you submit your pre-proposal.

Pre-proposal. The project pre-proposal is a draft version of your project proposal. We will provide feedback on your project ideas which you can then incorporate into your final project proposal. The optional sections will be mandatory in the final version, so we suggest you think a little about what you will write there.

Oral presentation. The project pre-proposal is accompanied by a 5-minute oral presentation. This will take place during class or after class, as necessary. The presentation should contain one slide for each of the items below, and be brought to class in PowerPoint or PDF.

Submission. The proposal should be approx. 1000 words. Include pictures and diagrams where appropriate. The pre-proposal should be emailed to your TA. The final proposal should be uploaded into CMS (in PDF format).

Content. The pre-proposal should contain the following sections:

1. **The Team.** Names of the people working on the project. We suggest working in groups of three. If you can't find a group, email the TAs and we will assign you to a group.
2. **Problem statement and motivation.** A statement of the problem. Describe the project scope.
3. **I/O Specification**. A clear, concise description of what the final system will do in terms of I/O behavior: What will it take in, and what it will produce.
4. **Background Reading** (OPTIONAL in pre-proposal stage). A list of relevant readings that you'll use to gain some background in your selected topic, including topics that will be covered in CS4700 but which you will have to learn on your own.
5. **General Approach** (OPTIONAL in pre-proposal stage). A high-level description of the general approach you'll use (e.g. heuristic search, learning, rules, belief networks). This section should

have a subsection entitled “Where’s the AI” where you explicitly articulate the AI component of this project.

6. **System Architecture and work plan** (OPTIONAL in pre-proposal stage). Explain the main components of the system, how they can be independently developed and independently tested, and who will do what.
7. **Data sources** (OPTIONAL in pre-proposal stage). If your project involves analyzing real data (e.g. game play data), identify potential sources for this data.
8. **Evaluation Plans** (OPTIONAL in pre-proposal stage). An explicit, coherent plan for quantitatively and/or qualitatively evaluating your system internally. In particular, identify (a) metrics that will help you measure performance, e.g. time or space to solve a problem, quality of a solution, or competition or comparison against a standard approach (b) a simple “toy” problem that you can use for early testing of your system – something that should be trivial to solve, (b) a “hard” test case, that will serve as you ultimate test. This is in addition to the evaluation being performed by the TAs.
9. **Schedule**. A schedule of work indicating the dates by which you plan to complete components of the system. This should be presented as a table listing dates and milestones.