

CS 4701: Foundations of Artificial Intelligence

Fall 2017
Instructor: Prof. Haym Hirsh

Thursday, March 16

Timeline

- Friday, March 17, 12:00pm: Teammate selection
- Friday, March 24, 12:00pm: Project proposals
- Friday, April 21, 12:00pm: Status reports
- Monday, May 15, 11:30am: Final project report

Teammate Selection: Friday, March 17, 12pm

- 2 people
- Variances from this require approval
- Due Friday, March 17, 12:00pm
 - Teammate names
 - or
 - That you haven't found a partner

Project Proposal: Friday, March 24, 12pm

- Title of your project
- Names with Cornell netids of team members
- A clear and concise description of what you plan to do (aim for 3-4 paragraphs)
 - Include the general approach you'll use / What area of AI you are exploring
- Evaluation:
 - What questions you will ask about your system / An explicit, coherent plan for a quantitative and/or qualitative evaluation of your work
- A timeline for your implementation *and* evaluation

Status Reports: Friday, April 21, 12pm

- Revision to your project proposal
- Include your original proposal, then what you decided to change:
 - Scope
 - Evaluation
 - Timetable – what has been done, what changes needed to be made
 - Etc.

Final Report: Monday, May 15, 11:35am

- Group Report:
 - Structure around project proposal
 - What you wanted to do / what you accomplished
 - What questions you asked / how you evaluated them / results
 - Lessons learned about task
 - 10 pages
- Individual Report:
 - Your contributions to the project
 - Personal lessons learned
 - 1-2 pages

Project Ideas

- Game Playing Program
 - Backgammon
 - Blackjack
 - Checkers
 - Othello
 - Hearts
 - Bridge bidding???
 - 3D Tic Tac Toe???
 - Connect 4???
- Machine Learning:
 - Character Recognition
 - Forecast Financial Markets
 - Playing a Game
 - Learn Endgame Rules from Examples
 - Make Predictions by Mining Social Media
- Genetic Algorithms
 - Genetic Programming
 - Learning Natural Language Grammars Using genetic programming for the automatic generation of computer programs
- A theorem-proving system for some (small) subset of mathematics
- A program that generates automatic crossword puzzles, starting from a dictionary and an empty board
- A system that plays a game (such as Tetris)
- A system that plays the repeated prisoner's dilemma (see for example <http://serendip.brynmawr.edu/playground/pd.html>)
- Ten Challenge Problems in Propositional Reasoning and Search
<http://www.cs.cornell.edu/selman/papers/pdf/97.ijcai.challenge.pdf>

Project Ideas

- Aim high
- Better to be mediocre on something ambitious than perform perfectly on something easy
- Evaluation:
 - Effort
 - Evaluation
- OK to do projects that connect to other efforts you might be undertaking
 - Must be clear what is distinct in this project
 - Must have ok from all involved