

# CS 5306 / INFO 5306: Crowdsourcing and Human Computation

Spring 2016

Course Project

(draft of 17 March 2016)

Due: Tuesday, May 17, 11:30 AM

The goal of the course project is to gain hands-on experience and to explore in greater depth some aspect of crowdsourcing and human computation. You should select a project well-suited to your personal interests and backgrounds, either designed by you or based on one of the suggestions given here or in class. You are expected to work in teams of 3, although you can vary from this with permission of the instructor (the further you go from 3 the better your argument must be). The sophistication of your project and expectations during grading will be based on your team size. Although you may already have some idea of people you'd like to team with, be open-minded – the best projects will come from teams whose members reflect a diversity of perspectives.

Any topic that seems connected to course topics is fair game. Your project can be something relevant to other interests, activities, or responsibilities you may have. If it is connected to other school-related efforts you must ensure that the portion specific to this course is well-delineated, that all relevant parties (other instructors, advisors, teammates, etc.) are comfortable with doing so, and that it is documented in your project write up. The focus can be on methods, ideas, systems building, etc. One word of caution on systems building projects: The goal of this course is not programming. Do not select a project where if you get hung up on complex software-building the entire project is doomed. Your project should “fail gracefully” should unforeseen barriers arise.

While you are free to design your own project, here are some project ideas to get you started:

- Design a “game with a purpose” (like the FoldIt or ESPGame projects discussed in class) where participants get the enjoyment of playing a game and as a side effect of their play they perform work of independent value.
- Develop hypotheses about how various cognitive biases might impact worker performance on Amazon Mechanical Turk. For example, does worker accuracy go up when tasks include images of religious significance, if, instead of payments to a worker, donations to a charity are made, or if the worker's webcam is on and displaying the worker's image to the worker?
- Implement and evaluate a new human computation algorithm for some task.
- Develop hypotheses about observed behaviors in a crowdsourced system, such as Wikipedia, TripAdvisor, Amazon Mechanical Turk, etc., and evaluate them using publicly available data from the given system. For example, do particular aspects of writing (such as word usage, sentiment, etc.) in article edits or talk pages lead to greater or lesser reversion of edits in Wikipedia?
- Solve some task using crowdsourcing. This is best done in a domain in which at least one member of your team has some expertise. For example, is there some information resource that would be useful to some group of people at Cornell that could be assembled through crowdsourcing? Think through how you would ensure that you'd get a crowd to participate – it would be terrible to go through the effort of building a system and have your project fail because you don't get enough people to participate. Be clear

what is interesting about your project – simply assembling the union of disjoint contributions (such as Amazon reviews) isn't an interesting project in and of itself.

It is ok if your project explores some hypothesis that proved false. Your grade will not be based on whether you discovered some new knowledge about an aspect of crowdsourcing, but instead whether you asked an interesting question, explored it effectively, and documented it in your report.

If you envision a project that would rely on workers on Amazon Mechanical Turk I can make available \$20 for payments for your project (possibly more, depending on how many projects request such funds). If so your proposal should include a budget estimate for how much money you predict your project will need (what kind of tasks, how much per task, how many workers you would need, etc.).

### **Milestone 1: Initial Project Proposals**

- Done individually
- Due Friday, March 18, 12:00 PM

Post 3-5 ideas for possible projects on Piazza. These need not be long, and will likely be only a few paragraphs. This is intended to be a low-pressure opportunity to share ideas, not to have precise project formulations. Do try to be clear what question your project is asking, and the form of work you think will be necessary to achieve it.

### **Milestone 2: Comment on Classmate's Ideas**

- Done individually
- Due Tuesday, March 22, 8:40 AM

Provide comments on at least 5 of your classmates' ideas. The more comments you give, the more credit you will get. You will also get more credit if you are one of the first to make a comment on an idea.

Remember that these are preliminary ideas, so don't be overly harsh. Be generous with praise for aspects of projects that you are positive about. Also be honest about concerns you have about the proposed project. For example, is it too ambitious? Does it have important risks (such as proposing a crowdsourced project that would fail if no one participates)? Don't just criticize, suggest what would make it better. The best expressions of concern include constructive feedback.

If you think the idea would make a good course project, say so explicitly, so your classmate can get a sense of people reactions to his or her proposals. If it's a project you might want to join, say so.

Make a note to yourself of the projects you might like to participate in. One of the goals of this milestone is to consider projects others are proposing, in case you want to join in that team. If someone else proposed a project similar to your own, say so, and consider whether some merger of the two might make sense.

### **Milestone 3: Revise Your Ideas**

- Done individually
- Due Thursday, March 24, 8:40 AM

Review the feedback you've gotten on the ideas you've posted and revise your ideas accordingly. Kill off any ideas that you no longer think worthy of pursuing. If you and a classmate have proposed similar projects and plan to merge them, say so, and explain how. The result should be longer than your original proposals, and should have more precision about what you propose doing and how to do it.

Please also be prepared to identify yourself in class on March 24 and say which project proposals are yours. The class meeting will be designed to facilitate team building.

#### **Milestone 4: Project Proposal**

- Done by your team
- Due Thursday, April 7, 8:40 AM

Submit a proposal (at least 3 pages) describing your proposed project. It should be clear what your goal is; what work will be necessary to achieve it, the milestones to do so, and some idea of the division of labor; what risks you foresee and how you might address them; and how success or failure will be evaluated. Identify any articles you found that might be relevant to your project. Please identify all team members. If the project is related to other work one or more team members are doing, explain how and explicitly identify the portion that is specific to this class. **Submit your proposal through CMS.**

#### **Milestone 5: Status Report 1**

- Done by your team
- Due Thursday, April 21, 8:40 AM

Update your project proposal. What has been accomplished? What remains? What surprises came along the way, and what changes did you have to make? Be sure to identify clearly what has changed since the project proposal was submitted – provide evidence of progress. **Submit to your TA (details TBA).**

#### **Milestone 6: Status Report 2**

- Done by your team
- Due Thursday, May 5, 8:40 AM

Update your project proposal. What has been accomplished? What remains? What surprises came along the way, and what changes did you have to make? Be sure to identify clearly what has changed since the Status Report 1 – provide evidence of progress. **Submit to your TA (details TBA).**

#### **Milestone 7: Project Report**

- Done by your team

- Due Tuesday, May 17, 11:30 AM

Your project should be documented in a report of roughly 7-8 pages using the AAAI style format available at <http://www.aaai.org/Publications/Author/author.php>. This is not a firm requirement but rather to give you some idea of what to aim for. Do not change margins, fonts, or do other sneaky things to shrink or stretch your report to desired size. The report should be in pdf format.

Items to include in your report:

- Give a simple description of the goal of the project. This is not the same as describing what you did, it's explaining what you were trying to do and why.
- Describe what you did. Beware: a diary is not a report. If you find yourself discussing your project in chronological order, step back and think instead about what your final accomplishments were and start from there.
- What are your findings/results? You started by saying what your goals were. Did you achieve them? How did you evaluate this? What implications might they have for others?
- Your project should show that you did your due diligence to be aware of relevant prior work, explaining where your project fits in with respect to it. Did you tackle a problem others have looked at? Say so. Are you adopting a methodology found in a paper you read? Say so. Do your results add something new to what others have done? Say so.
- What would be next steps if you were to have continued or grown your project?

You are strongly encouraged to finish your report in time to seek feedback from others. No matter how clear you think your exposition is, it is always helpful to get real life evidence from someone who has read it. If you have other students in your class review your report and give comments, please identify them on the title page of the report. This will be considered as part of the class participation portion of your grade. **Submit your report through CMS.**

#### **Milestone 8: Project Report**

- Done individually
- Due Tuesday, May 17, 11:30 AM

In addition to your group's project report, please submit a 1-2 page report about the project in terms of what you accomplished and learn doing it. **Submit your report through CMS.**