Half-Baked Presentation of Final Project Ideas – 5% of course grade
(5 points/100 total course points)

SI 699 Big Data Analytics
Jeff Sheng, PhD, MS - Assistant Professor
School of Information, University of Michigan

We have now reached the first milestone of your final project. This assignment borrows the term "half-baked" which we call UMSI's weekly faculty presentation where we present works in progress that are not fully thought through – they are "half-baked." Here, we will use this same concept where you will present to the class 2 different ideas for a final project, and one separate "dark-horse" idea, for consideration for your final project.

Due Date: Presentation in class Wednesday, February 22.
Deliverables (Materials uploaded in Canvas due before class: February 22, 2pm):

- A slide-deck or PDF that we can use for your presentation.

Learning Objectives: In this assignment, you will work with your final project team to creatively come up with different possible final project ideas, none of which are binding but are just part of brainstorming. You will also work with your teammates to give feedback on their ideas.

In doing this, students will learn:

- How to brainstorm and creatively think about research ideas.
- How to implement a "dark horse" methodology to think outside of established norms.
- How to give feedback to classmates that is constructive and helpful.

Assignment:
By the end of class on Feb. 15, you will have formed your final project team of 3-5 people to work on your capstone "big data" research project. This assignment is the first of 4 milestone components (the other three are a conference poster, video presentation, and final paper).

In this assignment, your team will present 3 different final project ideas to get feedback from your classmates. The first two ideas should be two completely different final project ideas. They should have different datasets and ask different questions. The third idea should be a "dark horse" idea, meaning, the idea takes one of your two main project ideas, and does something completely unexpected with it in some way as a possible alternative. Try to think as creatively as possible with this "dark horse" idea. Maybe it's implementing the same method but on a very different and unexpected dataset. Maybe it's trying a different method on the dataset, but a method that is unexpected. You may also come up with an independent idea (not a variation of the two) that is very unexpected. *** Be as creative and wild as you can with this third idea! ***

Your team will present your ideas for 5-7 minutes using the slide deck format given below. Then each team watching the presentation will discuss among themselves and rank the order for what idea they liked the most, then share with the class the order, why they chose this order, as well as other feedback and ideas for the group to discover. You will be graded both on the presentation (3%) and on the active participation of feedback to other groups (2%).

Half-Baked Presentation of Final Project Ideas – 5% of course grade
(5 points/100 total course points)

Slide deck format:
The following slides should be included in this suggested order. Like our other presentations, clear and simple slides are sufficient if they contain the main ideas.

1. **Title slide: Everyone's name** on the first side so you can introduce yourself.

2. **Origin story of your ideas:** What area of research/ideas did your group members first discuss and find most interesting as a focus for your final presentations. Were there agreements or disagreements?

3. **Idea 1:** What is the main topic of your first project idea, and at least one possible research question that you could explore with it?

4. **Idea 1 Data:** What data source or data sources can you use for this possible project?

5. **Idea 1 Method(s):** What "big data" methods could you use for this possible project?

6. **Idea 2:** What is the main topic of your second project idea, and at least one possible research question that you could explore with it?

7. **Idea 2 Data:** What data source or data sources can you use for this possible project.

8. **Idea 2 Method(s):** What "big data" methods could you use for this possible project?

9. **Dark horse idea:** What is the main topic of your wild dark horse project idea, and at least one possible research question that you could explore with it?

10. **Dark horse data:** What data source or data sources can you use for this possible project?

11. **Dark horse Method(s):** What "big data" methods could you use for this possible project?

12. **Final slide with all three ideas on one slide** so groups can see all three of them together and vote/rank them easily.

Half-Baked Presentation of Final Project Ideas – 5% of course grade
(5 points/100 total course points)

What is a "Dark Horse" idea??!!:

The traditional definition of a "dark horse" is a usually little-known contender (such as a racehorse) that makes an unexpectedly good showing. It comes from behind to win, and it does so with surprising strength, skills, or intelligence, in a way that no one else thought was possible.

In engineering, prototyping and HCI design, the idea (which seems to have originated at Stanford University), was a brainstorming methodology to challenge students to think about "previously unexplored and potentially risky or intimidating corners of their design space" (see the abstract of one of the first papers that published this idea below).

By thinking about an unexplored, unexpected, or risky idea, students were able to come up with much more innovative solutions because they could free themselves from conventional thinking. In some cases, "dark horse" ideas became the main idea itself and became an unexpected success – an iconic example of a "dark horse" idea is the original Apple iPhone.

3rd INT. CONF. ON INTEGRATION OF DESIGN, ENGINEERING & MANAGEMENT FOR INNOVATION
A.A. Fernandes, R.M. Natal Jorge, L. Patrício, A. Medeiros (Eds)
Porto, Portugal, 4-6th September 2013

USING A "DARK HORSE" PROTOTYPE TO MANAGE INNOVATIVE TEAMS

Tyler Bushnell [1], Scott Steber [2], Annika Matta [3], Mark Cutkosky [4], and Larry Leifer [5]

[1]Mechanical Engineering Department, Stanford University; busht@stanford.edu

[2]Mechanical Engineering Department, Stanford University; steber@stanford.edu

[3] Mechanical Engineering Department, Stanford University; amatta@stanford.edu

[4] Mechanical Engineering Department, Stanford University; cutkosky@stanford.edu

[5] Mechanical Engineering Department, Stanford University; larry.leifer@stanford.edu

KEYWORDS: Innovation, Prototyping, Design and Design Thinking, Creativity Thinking and Innovation

ABSTRACT: *Stanford University's design methodology program—a master's-level course in mechanical engineering—involves a prototype deliverable that explicitly prompts student design teams to investigate previously unexplored and potentially risky or intimidating corners of their design space. Each team carries out this exploration during a design mission known as the "Dark Horse Prototype." The prototype introduces a means of preventing premature convergence on an idea and forces teams to take a fresh look at their problem space. By reviewing case studies of projects in this course it can be seen that the Dark Horse prototype leads to most teams (1) replacing their vision with the Dark Horse vision or an element of it (2) adopting Dark Horse insights into their overall vision, or (3) using insights from the prototype to align as a team. We propose that the Dark Horse prototype is a powerful driver of innovation in any product development cycle, a useful tool for design space exploration, and a key asset in managing risk throughout the engineering design process.*

Half-Baked Presentation of Final Project Ideas – 5% of course grade
(5 points/100 total course points)

Grading Rubric (5 total points = 5% of your overall grade):

- **3 points: Presentation.** Following all the slide instructions, presenting two different ideas with two different possible datasets, and then showing creativity in coming up with a "dark horse" idea.

- **2 points: Group Feedback**. Your group's participation in ranking and giving feedback to the other groups. This should be an easy 2 points but note that group members who do not show active engagement (or are not paying attention and distracted on their laptops/phones) potentially risk the entire group getting a 0 or deducted score here. The success in group feedback relies on other people's attention such that they can give helpful and constructive ideas, which is why it is very important to listen and pay attention to everyone's presentations.