

Repository Entry Template Embedded EthiCS @ Harvard Teaching Lab

Overview

Course: CS 179 Useful and Interactive Systems

Course Level: Undergraduate

Course Description: The course covers skills and techniques necessary to design innovative interactive products that are useful, usable and that address important needs of people other than yourself. You will learn how to uncover needs that your customers cannot even articulate. You will also learn a range of design principles, effective creativity-related practices, and techniques for rapidly creating and evaluating product prototypes. You will also have several opportunities to formally communicate your design ideas to a variety of audiences. You will complete two large team-based design projects.¹

Module Topic: Gamification

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Tags: System design [CS] games design [CS] manipulation [phil] exploitation [phil] value capture [phil], gamification [phil] [CS]

Module Overview: In this module we discuss the ethics of gamification.

Gamification is the intentional application of various elements of game design to non-game life. Gamification is a central design tool used to increase motivational states and incentivize non-game activities. Key examples can be found in the private sector, e.g., Fitbit and Duo Lingo, as well as the corporate sector, e.g., Uber and Disney.

While gamification can offer great benefits by way of increasing user engagement and productivity, it also raises ethical concerns. After students are introduced to potential harms of gamification such as manipulation and exploitation, they practice identifying these harms in a series of real world examples.

At the end of the module students are asked to re-design a gamified system in order to ease worries of manipulation and exploitation. This activity allows the students to think more critically about how designers can mitigate any potential harms to users.

Connection to Course Material: This course is concerned with various ways to make systems useful or interactive. Gamification is one way in which this is done. The module looks at the ethical considerations surrounding this practice.

Gamification is currently a hot topic in CS and Philosophy. Instructors will have a lot of examples to choose from, as well as a lot of theoretical leeway when introducing this topic to students, i.e. there are a lot of

¹ <https://glassmanlab.seas.harvard.edu/cs179.html>

philosophical concepts that can be used to frame the topic.

Another apt topic for this course is the ethics of nudging. A nudge is an alteration in the decision environment that aims to influence human behavior. Gamified systems include nudges, and students might naturally connect the ethical issues surrounding gamification to those surrounding nudging, which include manipulation and exploitation, as well as paternalism.

Goals

- Module Goals:**
1. Introduce students to the idea of gamification by providing key examples in the private and corporate sectors
 2. Consider ethical considerations that arise from gamification
 3. Have students participate in a design activity where they are in charge of mitigating any potential exploitation or manipulation by the gamified system

- Key Philosophical Questions:**
1. What is gamification?
 2. What are common features of games?
 3. How might gamification harm users?
 4. What is “value capture”? Does it harm users?
 5. How might gamification be manipulative? How might a gamified system be exploitative?

The questions are chosen in order to help students (1) identify how gamification operates in CS fields and (2) identify common features with familiar games, e.g., board games and computer games. The subsequent questions focus on the idea of gamification as an application that might cause harm to users.

Materials

- Key Philosophical Concepts:**
- Manipulation
 - Exploitation
 - Value Capture
 - Agency

Manipulation is a strategy of influence that fails to sufficiently engage our capacities of deliberative and rational choice. Exploitation, on the other hand, typically involves a power asymmetry wherein a vulnerability is targeted to advance the interest of the powerful at the cost of the weaker party.

Value capture is a notion from philosopher Thi Nyguen. It is the idea that gamification simplifies

- Assigned Readings:**
- “Gamified Life” by Vincent Gabrielle Aeon
 - (optional) “Gamification and Value Capture” in *Games, Agency and Art* by C. Thi Nguyen 2020.

our values, and those simplified values can take the place of our richer values in reasoning and motivation. These concepts show us different ways in which agency might be compromised by gamification.

The reading provides an introduction to the use of gamification by corporations such as Uber, Lyft and Disney. It focuses on Disney’s gamification system to raise the question of whether Disney employees are being manipulated or exploited by the gamified hospitality system. The article pairs well with the module activity where students are asked to redesign the Disney system. The optional reading is a great background to prepare for the course. The chapter from Nguyen’s book argues that gamification is an ethical problem and that “value capture”, a central concept in Nguyen’s book, is key to explaining the problem.

Implementation

- Class Agenda:**
1. Introduce gamification via several examples, e.g., Fitbit, Uber, Duo Lingo, Disney, and Twitter.
 2. Have students think through the different game elements and how they appear in the above examples.
 3. Provide an overview of the usefulness of gamified systems, i.e., how games can improve life, productivity, interest and help users meet their goals.
 4. Introduce the ethical worries that arise from gamified systems: manipulation, exploitation, and value capture.
 5. Have the students assess the examples from the introduction to test whether they exhibit manipulation or exploitation.
 6. Conclude with an activity to re-design a system so that it is less manipulative and exploitative for users.

Sample Class Activity: “Fix It”: In groups of 3-4 students are asked to redesign the Disney work tool so that it is both useful and interactive, keeping the end goal of increased productivity.

Disney’s work tool measures worker productivity in two forms. First works have machines for laundering sheets and other hotel

Students must determine the user incentives, how the game is scored, and what elements will be added to or removed from the original design so that the system is less manipulative and exploitative.

After the activity, students share their findings with the class.

Module Assignment: Students are asked to come to the module with comprehension questions from the reading. Many student questions included big picture questions, such as “How does ethics interface with design?” “What are the guidelines for ethical gamification design?” and “Who determines whether a gamified system is ethical?”

Lessons Learned: Students were generally familiar with the concept of gamification but were less familiar with the ethical implications. For this course students produce an end of the year project. The students and course head were interested in implementing gamification into future CS projects.

linens. The machines monitor how long it takes a worker to complete a wash and will signal the worker to speed up if they are falling behind regulated production time frames. There is also a grand scoreboard in the work area where workers are ranked based on their productivity. Workers who are on schedule or better are highlighted in green, while those who have fallen behind are highlighted in red. These two features of the tool create a gamified setting where workers feel pressure to compete with each other and their timed machines.

The Embedded Ethics TA is a guest lecturer who teaches one module. Having students provide comprehension questions prior to the module running allows the fellow to get to know the strengths and weaknesses of the students comprehension of the material prior to teaching.