

CS396 Social AR/VR Studio

Northwestern University, Spring 2022

Dr. Kate Compton

Class Summary

An intense studio course on building social experiences in AR and VR. This course draws on theory from architecture, sociology, theater, and more to explain how we are social in real life, and how to use those principles to design better social experiences in the digital realm. We will be going on weekly "field trips" to VR/AR spaces, and building and testing experiences (some physical, mostly digital) on a weekly basis. We will be developing with phone-based VR on the WebXR open standard, as well as the many JS libraries for positional data, networking, and social connections necessary for modern social experiences. You won't need a VR headset, but will need a WebVR capable recent-ish smartphone, and a cheap Google Cardboard (we may just buy them in bulk)

Motivation

This class asks the ancient question "How do you throw a good party?" That is, how do you create a space, intentionally, that people want to inhabit. What activities do you provide? Regardless of the catering or decorations or activities, the fundamental feature of any party is that there are other people there to interact with. But there are parties where we stand isolated against a wall, or parties where we flow and feel connection with the large mass of people around us. What causes the difference?

It is not a trivial question. In addition to the difficulties of real world parties, virtual reality has been trying (and failing) to solve this question since the 80s. We can imagine in science fiction how great the parties will be, filled with fantastical scenery and costumes and magic. But when we put real headsets on, somehow it has failed to capture us, despite the latest headsets finally complete with everything we had asked for in the past 40 years of development.

Your challenge in this class is to discover what has been missing for 40 years. We will learn how humans present themselves, how we construct space for social interactions, how we enact rituals of playfulness and belonging. And we will learn all of these from fields outside of CS, as this problem is not obliged to fit within the traditional boundaries of a single academic field. We will read philosophers and party organizers and architects. We will build social experiments in VR, AR, and on Northwestern's campus, and with scientist's eyes, we will watch out classmates interact in them. And after 40 years, maybe we can answer: how will we throw a party in VR?

Who is this class for?

We will be building a few experiences *in* code (JavaScript, using Firebase, PeerJS, WebXR, A-Frame, and map libraries) so you will need some **light experience with JavaScript or similar languages**. That said, the hard part of this class is not the coding, but **understanding people**. So any background in theatre, sociology, dance, psychology, art, or anthropology is welcome and useful. The ability to think

independently and critically, as well as observe and document observations is also important.

Class Activities

This class will have two technological components, Fieldtrips and Happenings. In **Fieldtrips**, we will, as a class, go into an existing space (Oculus games, VRChat, Roblox, Skittish, real world coffee shop) and observe how it works and how it guides social activity. In **Happenings**, you will **build** an experience in a space (Roblox, A-Frame, Northwestern's campus), and invite in classmates or bystanders, and observe them. Emphasis will not be on technical mastery, but on using the tools available to create uniquely novel experiences and take creative risks.

We will have several Oculus headsets available for fieldtrips (**TBD** currently talking to an insider at Oculus for tech help on this), or you can purchase your own. You will need either a recent smartphone or a VR headset to develop happenings.

Physically-based activities trips will often happen during **class time**, and outside, weather permitting.

Asynchronous or remote participation: It is difficult to have social experiences without other people. When circumstances force remote or asynchronous participation, you are responsible for finding a group of people (family members, classmates, roommates) to do the happening or fieldtrip with outside of class time. Both Fieldtrips and Happenings will be turned in with an **Observation Report**, a structured Markdown questionnaire that you will use to reflect on the goals of the work, the features implemented, what happened when people used it, and what ideas from the weeks reading you find relevant to the exercise. Happenings will also require documentation (code, photos, or video) turned into Canvas as well. You may work in groups on you Happenings (and will probably need to!) but will always turn in your own personal Observation Report.

Anticipate 1-2 hours of reading per week, with the rest of your time spent on building or exploring experiences and writing up Observation Reports

Grading

- 40%: Fieldtrip reports
- 50%: Happening reports + documentation
- 10%: Participation in other people's happenings (TBD)

- A: 100% to 93.0%
- A-: < 93.0% to 90.0%
- B+: < 90.0% to 87.0%
- B: < 87.0% to 83.0%
- B-: < 83.0% to 80.0%
- C+: < 80.0% to 77.0%
- C: < 77.0% to 73.0%
- C-: < 73.0% to 70.0%
- D+: < 70.0% to 67.0%

- D: < 67.0% to 61.0%
- F: < 61.0% to 0.0%

Schedule

Week 1: PLAY

The philosophy of the class (taken from the Happenings at Black Mountain College in the 1950s) and what it means to **play with people**

Reading:

- selections from "The Well Played Game" and "The Imaginary Playground" (Bernie De Koven)
- Happenings: an art of radical juxtaposition (Susan Sontag)
- <https://www.youtube.com/watch?v=ManNYunSYkQ>

Happening: Cardboard arcade

Week 2: AR OVERLAYS

What happens when we take spaces that people **already inhabit** and try to run games in them? Location-based games like Pokemon Go and Ingress. **Technical push: mobile development with APIs, deploying a website with HTTPS**

Reading:

- "Image of the City" Kevin Lynch
- Hannah Nicklin: 2,010 People: Games in Socially Engaged Settings (<https://www.youtube.com/watch?v=6ggVfx1IZWE>)

Field Trip: Ingress

Happening: Building your own Pokemon Go

Week 3: INSTALLATIONS

How do you build a space with **invitations to interact**? What are people supposed to do, and how do we give them permission to do it? How do you overcome stage fright, social anxiety, and the feeling like you aren't invited?

Reading:

- <https://wellcomecollection.org/articles/Xbw-SRIAACUAQodX>
- <http://www.hollygramazio.net/public-play>
- <https://irasanyal.medium.com/bringing-play-to-public-spaces-78721f670d24>

Field Trip: Just A Line (<https://justaline.withgoogle.com/>)

Happening: Community Weave

Week 4: 3RD PLACES

What is *hanging out*? What is a "3rd place" and what purpose does it serve? What features does Jackbox Games have, and why is it a good 3rd place? **Technical push: connecting to PeerJS/Firebase**

Reading:

- The Third Place (Ray Oldenburg) <https://link.springer.com/content/pdf/10.1007/BF00986754.pdf>
- + one other academic article studeing a 3rd place

Field Trip: Coffeeshop/Roblox(Discord?)

Happening: Make your own Jackbox Game

Week 5: SOCIAL ARCHITECTURE

How do we build spaces for good parties? Principles of throwing parties and how to design the perfect social space. **Technical push: building spaces in A-Frame, programming for VR on a phone/headset**

Reading: Art of Gathering (Priya Parker)

Field Trip: Gather.town

Happening: Roblox or Gather.town hangout space

Week 6: BELONGING

What is loneliness? What are hobbies for? Social graphs and understanding how to play games with connectivity of social graphs. Making use of social motivators and collaborative activities to get people aligned. **Technical push: social network APIs**

Reading:

- Bowling Alone (Robert D. Putnam)
- Games with a problem (Kathleen Tuite)

Happening/Field Trip: TBD, team games?

Week 7: PRESENTATION OF THE SELF

What t-shirt are you wearing? Can I tell what band you like, what culture you're in, what school you go to? What happens when you wear a "mask", either in drama, or in everyday life? Let's talk to a VTuber, too.

Reading:

- Presentation of the Self in Everyday Society (Goffman)
- Impro, Mask theory (Keith Johnstone)

Field Trip: VRChat

Week 8: BODIES IN VR

Where is your body in VR? What is personal space in VR? What does "proprioception" mean? Can you make eye-contact in VR? **Technical push: body tracking in VR**

Reading:

- A Design Framework for Playful Wearables
- The Three Scales (<https://web.archive.org/web/20190227101604/http://elevr.com/the-three-scales/>)

Happening: VR Dance Costumes and sets: Wearables/Holdables/Inhabitables

Week 9: SURREALISM IN VR

Lets get WEIRD! Why limit ourselves to who we are in normal spaces? What impossible features can VR bring, and how can we use those to create new social experiences?

Reading:

- The Case for “Weird Social” in VR/XR: A Vision of Social Superpowers Beyond Meatspace
- Monster Culture: 7 theses (<https://americanhorrorstoriessite.files.wordpress.com/2017/08/jeffrey-jerome-cohen-monster-culture-seven-theses.pdf>)

Field Trip: Half-and-half (Oculus)

Week 10+: THE BIG HAPPENING

Its almost Dillo Day, should we do something? Pitch and build a happening that could be used in a party!

TBD Get together into groups and design larger, more complex happenings, in VR, AR, on campus, or a combination.