Experiencing the Great Chicago Fire of 1871

CS 491 , AR/VR , FALL 2017

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Brainstorming/Ideas:

1. AR app that shows you how things used to look
    a. Ideas
        i. Before, right after, now
        ii. Can have a tour guide
        iii. Points of interest
        iv. Interesting facts about the locations in question
        v. Scavenger hunt / interactive story
        vi. Old photos over new places
    b. Age ranges
        i. All age ranges
    c. Technology
    d. Group experience
        i. No
    e. Additional requirements
        i. Must be in chicago
2. VR app where you live out the fire
    a. Ideas
        i. For people who are not in Chicago
        ii. Can have a tour guide
        iii. From comfort of home
        iv. Same things as AR app
        v. Step into a house and see how a fire affects individual structures
        vi. Add interactions
            1. Sound
            2. Data visualization
            3. Movement through fire
    b. Age ranges
    c. Technology
    d. Group experience
    e. Additional requirements
3. Party fire bus
    a. Ideas
        i. Tour chicago and windows of bus show AR experience
        ii. Combines AR experience in group
        iii. Can add phone functionality
    b. Age ranges
        i. All ages
    c. Technology
    d. Group experience
        i. Yes
    e. Additional requirements
        i. Must be in Chicago

4. Utilize cave to teach classroom about fire
    a. Ideas
        i. Show how fire spreads
            1. Can pause it to explain further
        ii. Show before, during, and after
    b. Age ranges
    c. Technology
    d. Group experience
    e. Additional requirements
5. Museum exhibit
    a. Ideas
        i. Contains VR experience stations
        ii. Contains CAVE classroom for teaching
        iii. Contains AR experience
            1. Through tour guide and touring Chicago in real life
            2. Using AR app inside museum for additional information
        iv. EON reality for exhibits
        v. AR portal
        vi. Holograms of people (
        vii. Mrs. O'Leary, mayor, fire fighter, etc.)
        viii. Contains Mini version of chicago before fire
            1. With points of interest
        ix. Add artifacts
            1. Fire fighting equipment
            2. Newspaper clippings
    b. Age Ranges
        i. All ages
    c. Technology
        i. VR headset
        ii. AR app
        iii. CAVE
    d. Group experience
        i. Yes
    e. Additional requirements

Proposal

Description:

An application where users can explore the great Chicago Fire which offers information in both augmented reality and in regular 2D phone view. The augmented reality part of the application serves as a virtual museum and tour guide, where users will be given a map of Chicago including points of interest. If the user isn't based in Chicago, they can still experience the tour via the 2D experience.

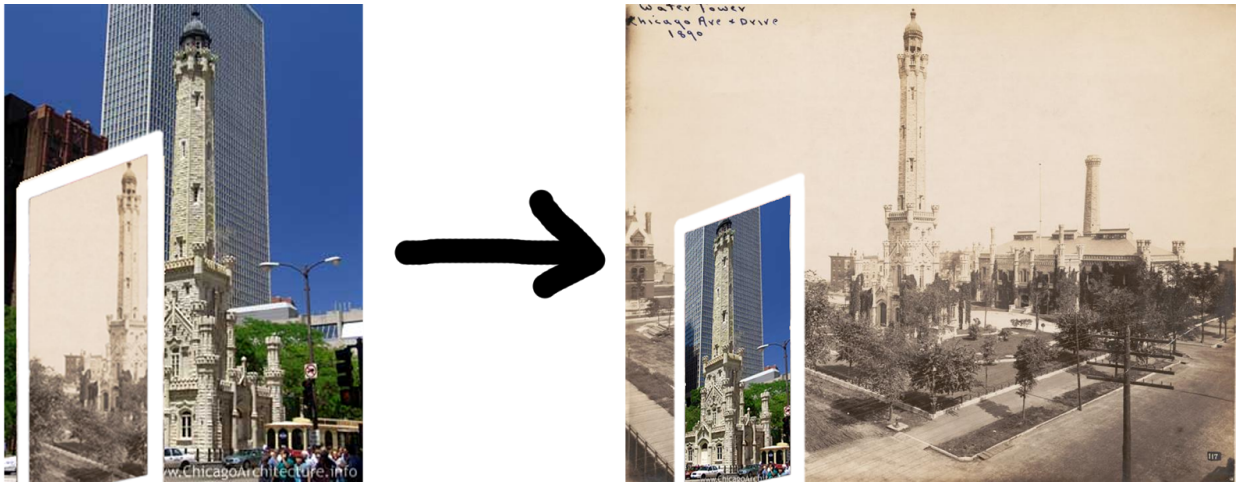
The user has two options, to follow a predetermined path or to go to locations in no predetermined order. When following the predetermined path, the user follows a virtual tour that begins where the fire began.

When walking to points of interest, there is an augmented path that appears leading the user to the nearest point of interest. The intent is for the audio and predetermined path to tell the story of where the Chicago fire started, where it spread, and where it ended. The audio can also be used to tell the user any interesting facts about the points of interests.

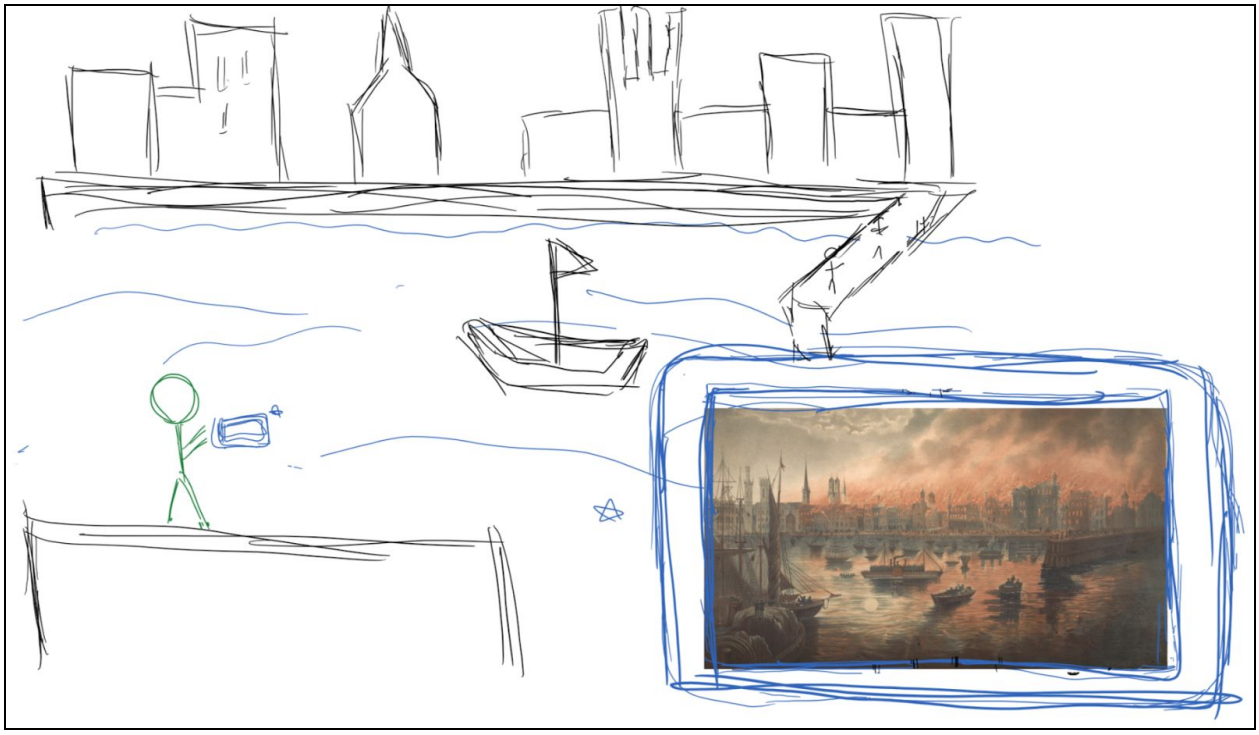
When the user arrives at a point of interest, there will be an augmented reality portal that appears where the user can step through and see how that area or building looked before the fire and explore the area.

Sketches / Drawings:

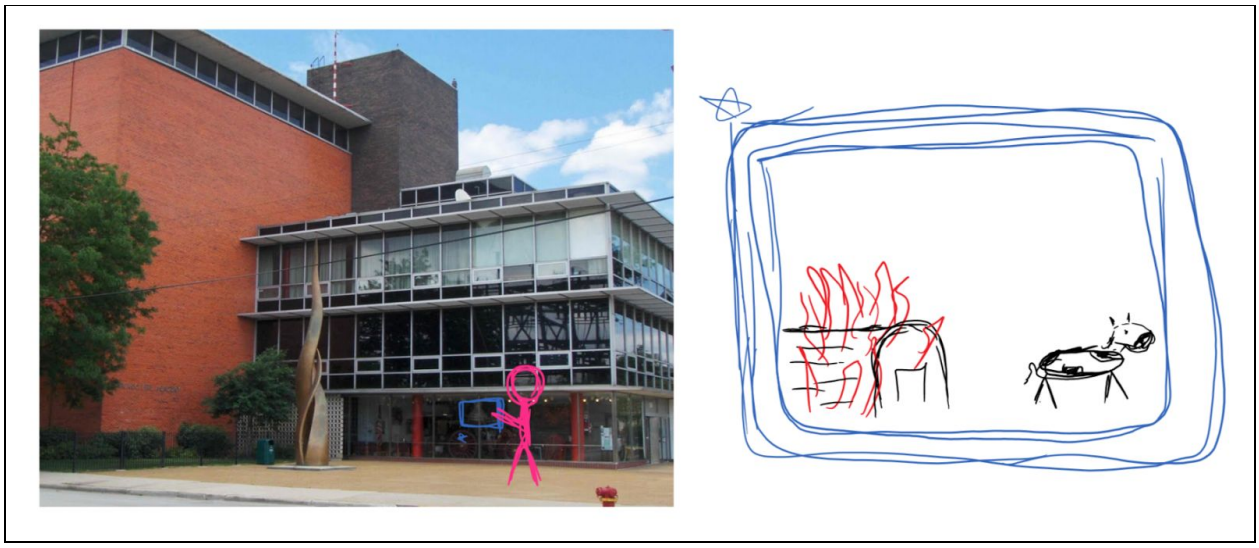
Portal to the virtual museum and back



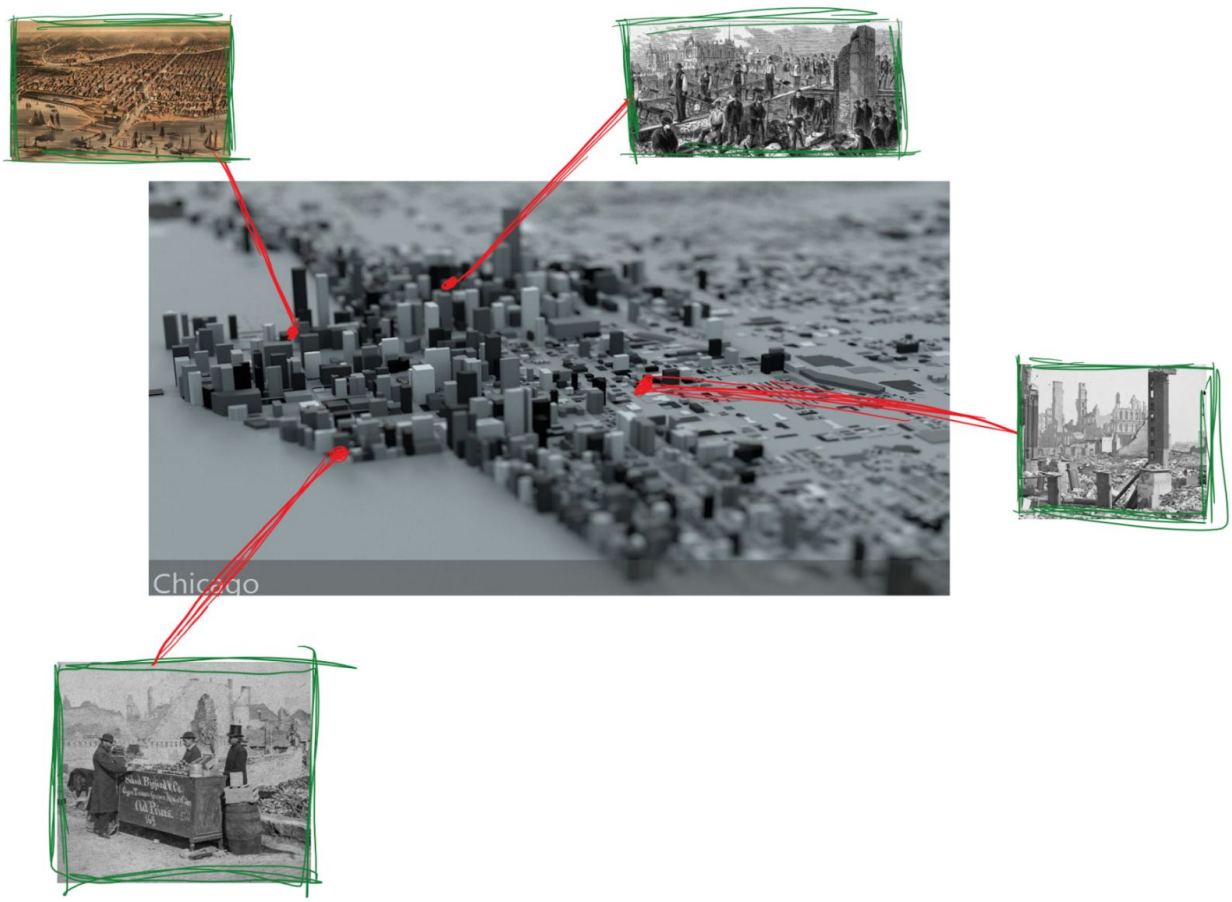
Present day: User points mobile device at the Water Tower. Our AR application overlays the appropriate images of what the city used to look like before and during the fire. In this case, the user sees what the Water Tower used to look like.



Present day: Same concept as above, except here the user is located on the river walk.



Present day: The location of where it all began . Before the fire began, Catherine O'Leary lived here and became famous when it was alleged that an accident involving her cow had started the Great Chicago Fire of 1871. (Currently the Chicago Fire Academy resides here.)



The user has the ability to bring up a small 3D model of the city, that overlays relevant information and routes on where to go next. Media is connected to the appropriate locations, and users have the ability to browse the images. Here is a link that further helps explain the concept.

Setup Cost:

The intent is to sell the application to a museum or to the city of Chicago.

The development team can be all interns as there is no new hardware or software that would be too difficult for interns to do. A development team of size 5 interns will be around 50,000 dollars for 6 months of work.

Cost to Run Experience:

Assuming a user has a smartphone (iPhone or Android) which can run the application, the experience will be free for the users, with the ability for the users to give donations to the developers or the city.

Rough Development Timeline:

Research phase (1 months)
Data gathering (1 months)
Phone prototype development (1 months)
User testing + feedback (2 weeks)
AR experience alpha build (3 months)
User testing + feedback (2 weeks)
AR experience final build (3 months)
Support + patches + bug fixes (until funding runs out / better application is created)

Participants:

The target audience of our experience will be teenagers to adults.

Young children can use the application but will need parental supervision, so the kids are safe (do not run into traffic or harm themselves) .

Elderly users, or people who have physical disabilities where movement can hinder their experience, are not encouraged with the AR application as the application requires a high amount of physical activity and can be dangerous.

All audiences and age ranges are able to use the non-AR version of the application.

Hardware Requirements:

- Smartphone
    - Compatible with AR
    - Speakers or Headphones (for the audio tour)
    - Ability to display GPS accuracy (if you are planning on going there in the physical world)

Software:

- To run the experience, you need the application itself.
- Applications that will be needed to create the application (Unity, ARkit , Xcode, etc.)

Staffing Requirement:

Initial staff to develop application, after development a small of team of 5 is required for maintaining the application so it is compatible with phone software updates and that all information displayed in the application is accurate.

Location Requirement:

- Chicago: The application highly recommends for the user to be in Chicago - the application provides an AR experience which is mapped to the city.
- Non-Chicago: In case the user is not in Chicago, the application provides an intractable 2D map with information about the key events and locations.

Data/Sources:

https://www.google.com/maps/d/u/0/viewer?mid=1CryzGjBph9DQURj7RMIUuRk5I9o&hl=en_US&ll=41.88587300000004%2C-87.62641699999995&z=15
https://en.wikipedia.org/wiki/Great_Chicago_Fire
https://c1.staticflickr.com/9/8480/8269891919_9f4777aa2d_b.jpg
https://www.greatchicagofire.org/view-item/974/
http://www.history.com/s3static/video-thumbnails/AETN-History_VMS/21/206/tdih-oct08-HD.jpg
https://www.greatchicagofire.org/ruined-city/burnt-district/
https://gizmodo.com/this-clever-map-compares-chicago-before-and-after-the-g-1209404577
https://www.lib.uchicago.edu/e/collections/maps/chifire/
https://www.damninteresting.com/the-forgotten-fire/
https://www.greatchicagofire.org/sites/greatchicagofire.org/files/imagecache/item-node-poster-920wide/i05902_poster.jpg
http://www.chicagoarchitecture.info/Images/GoldCoast/OldWaterTower-004.jpg