

# Assignment M3

Gabriela Haas

ghaas6@gatech.edu

**Abstract**—The investigated task involves viewing videos on the Instagram app available to smartphone and tablet users. Instagram does not have a function that allows users to fast-forward, rewind, or pause video content. However, there are plenty of similar applications that do allow for this functionality. The goal is to implement a function that prevents users from missing content.

## 1 BRAINSTORMING PLAN

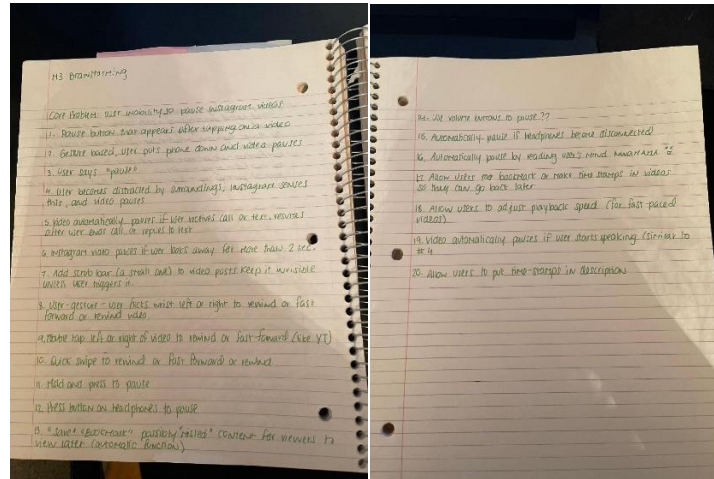
My brainstorming plan is outlined below. The goal is to generate twenty ideas that provide a solution to the problem. In this case, the problem is a user's inability to pause, rewind, or fast-forward video posts on Instagram. This results in users missing out on segments of a video.

1. Grab a pen and sheet of paper.
2. Begin by writing down the core problem.
3. Set a timer for thirty minutes and write down at least twenty ideas that provide a solution to our problem. Ideas may only be a few words long. Explore alternatives.
4. If I cannot write down twenty solutions in thirty minutes, I will take a break and repeat the timed process once more.

## 2 BRAINSTORMING EXECUTION

The ideas I came up with during my brainstorming session can be seen in figure 1 below.

Figure 1 — Written ideas that came out of my brainstorming session.



Some of the ideas that came out of this exercise are like one another. Below is a clean list of the ideas written down during the brainstorming session.

1. Pause button that appears after tapping on a video.
2. Gesture-based command to pause the video (user puts the phone down).
3. The user says "Pause" aloud.
4. Instagram senses when the user becomes distracted and pauses automatically.
5. The video pauses automatically when the user receives a call or text, the video resumes where it left off when the user ends the call or finishes replying to a text.
6. Video automatically pauses if a user looks away from the screen for two or more seconds.
7. A Scrub bar is added to the bottom of the video, invisible when the user is not touching the screen.
8. Gesture-based command to rewind or fast-forward if user flicks phone to the left or right.
9. Double-tap to the left or right of the interface to rewind or fast-forward (respectively) fifteen seconds (like YouTube).
10. A gesture-based command where the user swipes to the left or right to rewind or fast-forward fifteen seconds.
11. Tap and press the interface to pause.

12. Press the button on the headphones to pause.
13. An automatic function where Instagram saves video content if it suspects the user missed part or all of it.
14. Use volume buttons to pause; press down on both buttons simultaneously.
15. Automatically pause if headphones become disconnected.
16. Automatically pause by reading the user's mind.
17. Allow users to create timestamps in videos so they can go back and watch the segment later.
18. Allow users to adjust playback speeds.
19. Video automatically pauses if the user starts speaking.
20. Allow users to add timestamps to post descriptions.

### **3 SELECTION CRITERIA**

The design alternatives were selected based on the following criteria. For starters, design principles such as discoverability, consistency, and simplicity were kept in mind when selecting three design alternatives to pursue. In addition, the design alternative being considered must be possible to implement. Furthermore, the most important question asked was which design alternative will benefit *all* users since Instagram is used by users of various backgrounds, ages, and skillsets.

As stated in assignment M2, the data inventory requirements are efficiency, learnability, and functionality.

#### **3.1 Efficiency**

Observing the principle of consistency aided in selecting an efficient design alternative. Many existing social media apps allow users to pause, fast-forward, and rewind videos. For example, apps like Facebook, YouTube, and Twitter allow users to accomplish these tasks efficiently. These tasks take about a second or two to accomplish. To sum up, selecting a design alternative consistent with other efficient interfaces will fulfill the efficiency requirement drawn from the data inventory.

#### **3.2 Learnability**

Adhering to the principles of discoverability and consistency helped select design alternatives that satisfy the learnability requirement. Making functions discoverable enables users to learn how to use an interface quicker. Furthermore, pursuing design alternatives consistent with similar interfaces will also increase learnability because moderate social media users will *already* be familiar with the design alternative's functions.

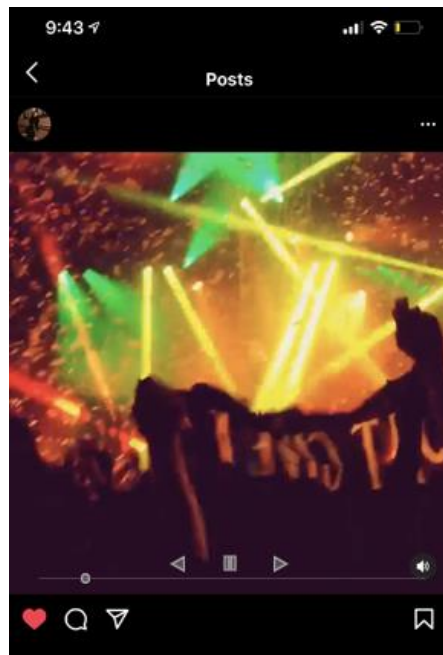
### 3.3 Functionality

The functionality requirement necessary to solve the users' problem is a function that allows users to pause, fast-forward, and rewind videos on Instagram. Picking a design alternative that is consistent with the functionality used by existing interfaces can satisfy this requirement.

## 4 WIREFRAME PROTOTYPE

The first design alternative prototype is a standard scrub bar seen on similar applications. It allows users to pause, rewind, and fast-forward. See figure 2.

*Figure 2* — Wireframe prototype representing pause, rewind, and fast-forward functionality. Source: Personal Account.



The wireframe prototype in figure 2 meets both the learnability requirement and the functionality requirement. Users may easily recognize the scrub bar's familiar aesthetic. As a result, users familiar with social media applications will spend less time figuring out how the interface works. It utilizes traditional pause, rewind, and fast-forward buttons seen on similar interfaces. The placement is also standard. In other words, the function and its layout are consistent with existing tools. Furthermore, adding buttons that allow users to pause, rewind, and fast-forward videos fulfills the functionality requirement. One could argue that this prototype fulfills the efficiency requirement since interfaces with similar scrub bars are efficient and allow users to pause, rewind, and fast-forward with one tap. However, since this prototype does not allow for interaction of any kind, and its sole purpose is to portray the look and feel of this design alternative, the efficiency of this design alternative cannot be measured.

Based on the survey results gathered previously, 84% of survey respondents use more than one social media app. Furthermore, all but two (out of fifty) survey respondents spend *at least* one to two hours using social media applications a day. Based on these statistics, the survey respondents are familiar with social media applications, and they are not first-time users. Furthermore, 84% of survey respondents use YouTube, which *only* serves video content. Since the design alternative above is like the functions implemented to pause, rewind, and fast-forward on YouTube, many users will probably adapt well to this design alternative for Instagram.

## **5 TEXTUAL PROTOTYPE**

The second design alternative prototype involves having the Instagram app sense when the user's attention has been usurped and automatically pausing the video. This functionality will work by analyzing the user's face, like how social media filters recognize faces. When a user looks away, the video being viewed will automatically pause. A small message will appear explaining the pause that says, "Paused due to attention diversion". This design alternative can be made feed-forward by including a small image (of a face-like icon that matches the movement of the user's) that conveys to the user that Instagram is aware of them and awaiting

potential distractions. This face may gradually turn red if the user begins to move out of focus. Once the user is entirely out of focus, a separate red frown icon will appear.

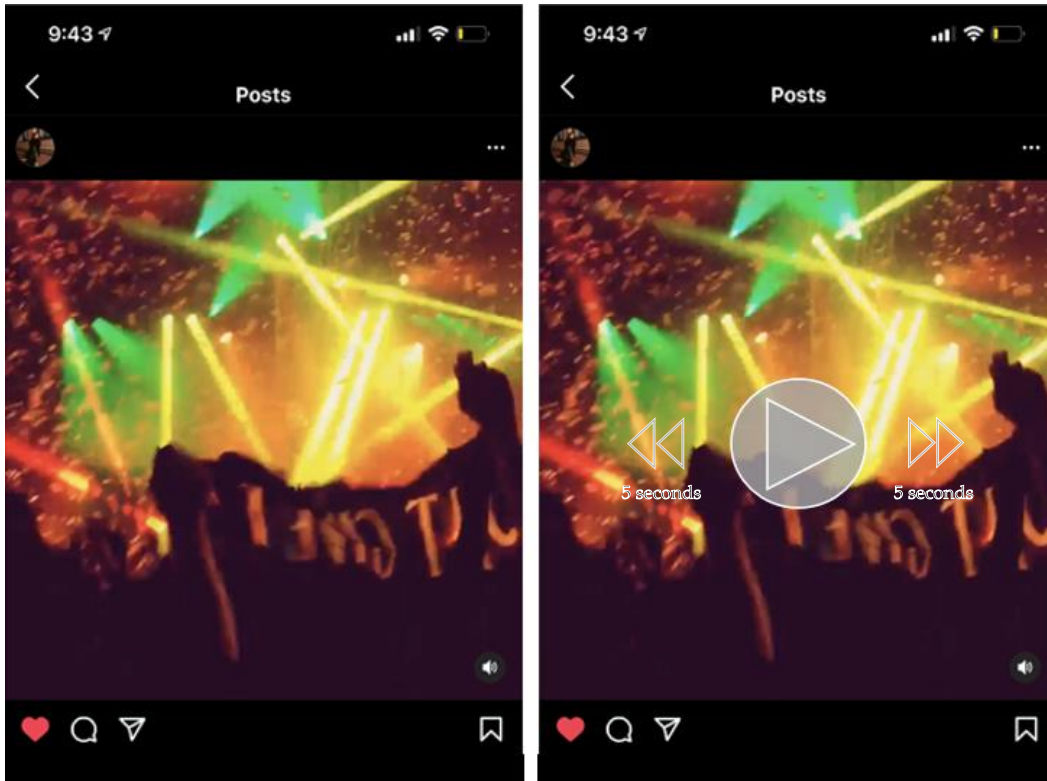
The design alternative meets the efficiency requirement because viewed content will pause almost immediately following the user's change of focus. No task is required of the user to pause the video; this task is offloaded onto the interface. As for learnability, this functionality is unlike anything experienced on similar applications. The message displayed after looking away from the interface serves as feedback that helps bridge the gulf of evaluation, thus allowing the user to learn how the interface works quicker and helping them develop an accurate mental model. Furthermore, this design alternative is feed-forward. It conveys to the user that their face is being analyzed. It also indicates how well Instagram perceives the user's face using color. All in all, this design alternative does not fulfill the learnability as well as the first prototype discussed. However, appropriate feedback and feed-forward qualities will aid in learnability. As for the functionality requirement, this design alternative fulfills part of the requirement. While this design alternative pauses content for users, it does not allow for rewinding or fast-forwarding. This alternative would either need to be adjusted or used in conjunction with another alternative to fulfill the functionality requirement completely.

This prototype meshes well with the audience described in the data inventory. Many survey respondents admitted to using social media apps while waiting for their takeout, at work, or while using public transportation. All in all, many users reportedly use social media in public settings where becoming distracted is more likely to occur than it is at home.

## **6 CARD PROTOTYPE**

The third design alternative prototype is a function that makes a video on Instagram pause when the user puts their phone down or drops it. The two system states can be seen in figure 3 below.

*Figure 3* — Wireframe prototype representing the interface's state while watching a video versus the state after the user puts their phone down. Source: Personal Instagram account



The view on the left represents a video being played. The video on the right represents the state of the interface after the user puts their phone down or drops it (gesture). After the user makes such a gesture, the video being viewed will pause. The symbol in the middle of the screen represents play, so the user can resume the video once they are ready to view it. The icons to the left and right of the play button will rewind or fast-forward five seconds if the user taps it.

This design alternative meets the efficiency requirement because pausing video content is offloaded onto the interface. Furthermore, the task of resuming the video requires one tap from the user. Rewinding or fast-forwarding the video is also very efficient; it requires one tap. This design alternative also meets the learnability requirement because the alternative introduces well-known functions. The play button is consistent with other tools which bridge the gap of execution

and evaluation. The rewind and fast-forward buttons are familiar too. A user that realizes their content has stopped will look at the interface and recognize that the video paused because the play button is available. As for the functionality requirement, this design alternative fulfills the defined requirements. This design alternative allows users to pause, rewind, and fast-forward video content.

This prototype meshes well with the audience described in the data inventory. Many survey respondents admitted to using social media apps while waiting for their takeout, at work, or while using public transportation. All in all, many users reportedly use social media in public where becoming distracted is more likely than it is at home. While distracted, users may lower their phone or put it away entirely if their environment requires it.