Heuristic Evaluation of TrainGone

For a more in-depth overview of A9, please refer to the [A9 assignment spec](#).

1. Problem/Prototype Description

TrainGone is a platform that bridges the gap between ASL learners and the Deaf community by allowing users to seek the English word corresponding to an ASL sign via its visual parameters such as handshape, body location, palm orientation, and movement.

2. Violations Found

Task #1: Identify Word

1. **H1: Visibility of System Status / Severity 1 / Found by: C**
   Task #1: Identify Word
   Description: Loading Screen moves extremely quickly.
   Rationale: Prior to the actual search by sign screen, the loading screen moves extremely fast, which can be surprising to the user.
   Fix: A small timer that the loading screen corresponds to, allowing the user to prepare themselves before the actual application is open.

2. **H2. Match between system and the real world / Severity 3 / Found by: D**
   Task #1: Identify Word
   Description: The terminology used like handshape, palm orientation, and body location may not be familiar to users unfamiliar with ASL or even users familiar with it. and this may make it difficult for users just learning ASL to search by sign.
   Rationale: This violates the principle of using language and concepts familiar to the user. If the terminology is not user-friendly or aligned with common understanding, it creates a barrier for users trying to identify ASL signs.
   Fix: Provide clear explanations or tooltips for these terms. Consider using more user-friendly language that aligns with common understanding.

3. **H2. Match between system and the real world / Severity 2 / Found by: A, B, C**
   Task #1: Identify Word
   Description: Labeled "handshape," but choosing between letters
   Rationale: This may cause confusion on what this parameter is looking for. Say a user wants to find signs that aren't spelled (like "book"). There are no letters that have the same shape as this word. The current design gives the impression that the only signs that can be searched are those that are spelled (signed) out.
   Fix: If focusing on handshape, remove the letters at the bottom. If the intention is to use the alphabet, relabel the section as "alphabet." If the intention is to use

the alphabet as a point of reference and have the users choose between what might look similar, adding information to explain this would be helpful to clarify.

4. **H3. User control and freedom / Severity: 3 / Found by: A, B**
Task #1: Identify Word
Description: You cannot swipe left to go back.
Rationale: If a user swipes right to find another example of the same word, they cannot swipe left to go back to the previous example. This can be frustrating if the user swiped by accident, or simply wants to revisit the previous example.
Fix: Allow the user to swipe left to revisit the previous example.

5. **H3. User control and freedom / Severity: 3 / Found by: B, C**
Task #1: Identify Word
Description: After searching for a sign, the user cannot "X" out a particular body location.
Rationale: If a user erroneously selects a wrong element in their search, they are able to easily cancel it by clicking the "X" mark in the top left. However, this is only the case for handshape, palm orientation, and direction. Body location cannot be modified without going back to the original search and changing it.
Fix: Add option to cancel body language after search is completed.

6. **H3: User Control and Freedom / Severity: 2 / Found by: C**
Task #1: Identify Word
Description: User cannot backtrack to 'Search by Sign' homepage or the parameter selection page.
Rationale: User is forced to continue in the process of searching for a sign with no option to reevaluate the previous decisions that they've made.
Fix: Implement a clickable back button that allows users to remove forwards and backwards throughout the task.

7. **H3: User Control and Freedom / Severity: 2 / Found by: C, D**
Task #1: Identify Word
Description: User cannot unselect the signs, orientations, etc. that they have previously selected.
Rationale: As the categories become more intensive with a larger selection of options, it could be helpful to include an option that allows the user to restart their entire 'Search by Sign' selection process. An overabundance of selections could lead to the user being confused or overwhelmed.
Fix: Include a deselect all button that allows the user to remove all the options that they have chosen.

8. **H4: Consistency and Standards / Severity: 1 / Found by: C**
Task #1: Identify Word
Description: The cards underneath palm orientation has descriptors with inconsistent capitalization.

Rationale: The overarching categories have different capitalization properties than the corresponding descriptors for each selectable button (i.e. Palm Orientation v. Facing you, Facing away).
Fix: Standardized capitalization methods.

9. **H4. Consistency and Standards / Severity: 2 / Found by: B**
Task #1: Identify Word
Description: Handshape B and the "facing out" palm orientation share the same graphic.
Rationale: On first run through, a user that is trying to find a word quickly may mix up handshape and palm orientation, given that they share the same graphic. Furthermore, if a user selects handshape B and the "facing out" palm orientation, and then hits search, they will be unable to distinguish them if they want to cancel one on the next screen.
Fix: Differentiate between palm orientation and handshape graphics. For instance, add arrows to the palm orientation graphics.

10. **H4. Consistency and Standards / Severity: 1 / Found by: B**
Task #1: Identify Word
Description: "Facing out" and "facing away" are both used to describe the same palm orientation
Rationale: When you first search, the term "facing away" is used to describe the second palm orientation. However, the app sometimes uses "facing out" to describe this same button.
Fix: Solely use "facing away" or "facing out" to refer to this orientation.

11. **H5. Error Prevention / Severity: 3 / Found by: D**
Task #1: Identify Word

Description: It's not clear if the system prevents users from making selections that could lead to errors or misunderstandings, such as in the case of searching by sign.

Rationale: The heuristic emphasizes the importance of designing interfaces that prevent problems from occurring. Without error prevention measures, users might make selections that lead to confusion.

Fix: Implement guidance to prevent users from making conflicting selections or combinations that may not make sense in ASL. Provide clear confirmation options that help the user easily guarantee they are doing what is intended.

12. **H6: Recognition not Recall / Severity : 2 / Found by: C**
Task #1: Identify Word
Description: Users are unable to easily view category descriptions.
Rationale: Especially for newer ASL users, may be helpful to include short descriptions emphasizing differences between categories.
Fix: Add a short description describing each category (i.e. 'Handshape', 'Palm Orientation', 'Select Body Location').

13. **H7. Flexibility and efficiency of use / Severity: 2 / Found by: B, C,**
Task #1: Identify Word

Description: No way to easily search for the same word again.
Rationale: If the user searched for a word and then accidentally exited or closed the app, and wanted to pull up that result again, there is no easy way to do so, aside from starting from scratch.
Fix: Include recent searches on the search by sign page.

14. **H7. Flexibility and efficiency of use / Severity: 1 / Found by: B**
Task #1: Identify Word
Description: Selecting different orientation takes several additional clicks.
Rationale: If the user wanted to use any orientation other than the three most popular, it would add several more taps, which take the user to an additional page and slow down the efficiency of the search.
Fix: Allow the user to swipe through more than three palm orientations, and only include the arrow at the end if the user needs to search for their orientation.

15. **H8: Aesthetic and Minimalist Design / Severity: 1 / Found by: C**
Description: The 'Search by Sign' should be larger and serve as a header.
Rationale: The header should remain stationary and not transparent such that the subcategories do not overlap when the user scrolls and the text should be larger to highlight the functionality of the page.
Fix: Filled header and larger text size.

16. **H8. Aesthetic and Minimalist Design / Severity 2 / Found by D**
Task #1: Identify Word
Description: The interface feels cluttered with too many options, specifically having to do with the body location.
Rationale: The holes on the body aren't very aesthetically pleasing or minimal, and seemingly complicates the process of searching by sign.
Fix: Alter the design choice for choosing body location and reduce choices to general areas. Potentially offer examples for people new to ASL.

17. **H8. Aesthetic and Minimalist Design / Severity 2 / Found by A, C:**
Task #1: Identify Word
Description: In the page once parameters are inputted, the resulting search page looks cluttered with multiple videos of many different words placed in a non-organized manner (goes from "school", to "book", then back to "school")
Rationale: A user may become overwhelmed by how many videos immediately pop up. A user will also become confused by the non-organized switching of words, resulting in greater user effort to keep track of what word they're looking at if they're quickly switching from one to another.
Fix: You can create folders labeled the potential words (i.e, one folder labeled book, another school, etc.) which displays one video as a thumbnail, and when clicked on then displays all videos containing the word book.
Or, you could organize the search page with line-breakers, with each section dedicated only to one word (though this may be more overwhelming and more scrolling required than the first fix)

18. **H10. Help and Documentation / Severity: 3 / Found by: D**

Task #1: Identify Word

Description: The prototype doesn't mention the availability of help or documentation for users who may need assistance with using the app. This seems like a complicated app that requires an in app tutorial.

Rationale: For such a complicated app, users are mostly left on their own and will be left without guidance.

Fix: Introduce a help or information section within the app that users can easily access. This should be written and in video form for various users.

19. **H11. Accessible Design / Severity: 2 / Found by: A:**
    Task #1: Identify Word
    Description: In the results page, the word placed on the thumbnails on videos are small and white w/o any highlighting.
    Rationale: If the thumbnail of the video is ever a light color, the word would be very difficult to read for a person with low vision/in general. Results in inconsistent degrees of legibility based on the thumbnail's color.
    Fix: Add a consistent backdrop behind each word. This can be done by either putting the word outside of the thumbnails altogether, or adding a small rectangle/highlighter behind the title if choosing to keep it on the thumbnail.

20. **H11. Accessible design / Severity: 1 / Found by: A, B**
    Task #1: Identify Word
    Description: Parameter headers for search are a little small
    Rationale: Text size is slightly small for handshape, orientation, and body location, despite these being very important headers. This might be hard for users who have trouble with short-range vision. In addition, there is white space available for increasing the size.
    Fix: Increase the font size of the parameter headers.

21. **H11. Accessible design / Severity: 2 / Found by: A, B**
    Task #1: Identify Word
    Description: Body location points are a little small.
    Rationale: For Fitts law reasons, the buttons for body location are small and a little hard to hit, which might slow down the user that is trying to quickly search something.
    Fix: Make the body location buttons larger.

22. **H12. Value alignment and inclusion / Severity: 1 / Found by: A, B, C**
    Task #1: Identify Word
    Description: Skin tone of hand graphics may encode harmful ideas about normative skin tones.
    Rationale: By using a fair skin tone for all hand graphics, this may leave out some users, or set ideas of what a "normal" hand looks like.
    Fix: Use a diversity of skin tones, or avoid skin tone altogether and only use outlines/abstract colors.

Task #2: Learn from others

23. **H2. Match between system and the real world / Severity: 2/ Found by: A**
Task #2: Learn from Others
Description: When clicking the pin button, the notification that appears is "You are now following this word." It may be confusing as to what it means to follow a word.
Rationale: "Follow this word" is not a typical concept, and so the wording can lead to confusion. Additionally, a pin to follow a word is not intuitive, as users may assume a pin would mean pinning to their page, or pining the video specifically to save for later, but not the word itself.
Fix: Change the wording to something like "You will now be updated on more videos with this word." Change the icon to something more intuitive, like a plus button or a folder.

24. **H2. Match between system and the real world / Severity: 2/ Found by: D**
Task #2: Learn from Others
Description: The icon resembling a film director's "action" may not be universally understood, especially by users unfamiliar with film industry symbols.
Rationale: Symbols should be intuitive and widely recognizable. Using a symbol that is not universally understood could create confusion and hinder users' ability to associate the icon with the intended action.
Fix: Consider using a more universally recognized symbol for recording videos.

25. **H3: User Control and Freedom / Severity: 2 / Found by: C**
Task #2: Learn from Others
Description: User is unable to 'unlike' a video.
Rationale: The user does not seem to be able to remove a like from a video, which could lead to an oversaturation of 'liked' content.
Fix: Allow users to toggle between liking a video and removing a like from a video.

26. **H3: User Control and Freedom / Severity: 2 / Found by: C**
Task #2: Learn from Others
Description: User is unable to 'unfollow' a word.
Rationale: The user does not seem to be able unfollow a word that they previously selected, which can lead to an unnecessary or overwhelming number of videos or the presentation of undesirable content.
Fix: Allow users to toggle between following and unfollowing a word.

27. **H3: User Control and Freedom / Severity: 2 / Found by: C**
Task #2: Learn from Others
Description: User is unable to return to the initial caption appearance after selecting a tag for further information.
Rationale: User is unable to return to the initial structure of the caption as the bottom of the video. This could be slightly frustrating for users that would like

to standardize their captions in order to better view the video after learning more.
Fix: Allow users to tap on the overall textbox to return to the initial state of the caption.

28. **H4: Consistency and Standards / Severity: 3 / Found by: C**
Task #2: Learn from Others
Description: The two videos have different corresponding icons.
Rationale: The first video does not have icons along the right margin of the screen, but the second does. This can cause user confusion as it's unclear which 'like' button should be pressed in the second video and if the two videos are associated with different functionalities.
Fix: Determine a consistent number and placement of video icons.

29. **H4. Consistency and standards / Severity: 2 / Found by: A**
Task # 2: Learn from others
Description: When users click on a tag to see words that fall under that category, there are a variety of different words, but one word (hello) that appears multiple times in random areas.
Rationale: Users may be confused if one "Hello" is different that another "Hello"
Fix: Have only one video for a word appear, and if the user clicks on it then they may be able to see all the different Hello videos.

30. **H4. Consistency and standards / Severity: 4 / Found by: A**
Task #2: Learn from Others
Description: Between one scroll to another, the icons on the bottom navigation bar both change icons and positioning of icons. (i.e. home moves from center to right)
Rationale: Users will be confused on where to press to go to specific functions (used to press middle, now needs to press left). Additionally, with icons switched (i.e. video to bubble) users may not know what to press to get to a feature.
Fix: Use the same navigation bar for all screens with consistent icons and placements.

31. **H4. Consistency and standards / Severity: 1 / Found by: A, B**
Task #2: Learn from Others
Description: App uses different icons to represent FYP
Rationale: The FYP is typically represented with a film clapboard, but if you scroll down on the example of the word "school" to view the word "bye," it's a magnifying glass.
Fix: Use only the clapboard to represent the FYP.

32. **H4. Consistency and standards / Severity: 4 / Found by: A, B, C**
Task #2: Learn from Others
Description: Like count and bookmark buttons only present some of the time.
Rationale: If you scroll down on Dria's photo, the photo below has buttons that display the like count as well as a book with a bookmark. However, these

graphics are not present on the content above.

Fix: Remove these buttons or add them to all content screens.

33. **H5. Error Prevention / Severity: 2 / Found by : D**

Task #2: Learn from Others

Description: Users might accidentally follow a word, and there may not be a clear option to review and undo this action.

Rationale: Error prevention involves providing users with a chance to confirm or reconsider actions to avoid unintended consequences.

Fix: Implement a temporary preview window that allows users to review their action before confirming to follow a word, reducing the likelihood of accidental follows.

34. **H6: Recognition not Recall / Severity: 2 / Found by: C**

Task #2: Learn from Others

Description: Users are unable to easily view the fluency of the signer in the caption of their video.

Rationale: User must go to the signer's profile to view their fluency. Reducing the necessary number of clicks keeps the user engaged and helps users determine the most experienced users to learn from.

Fix: Add a tag corresponding to the level of the signer's fluency.

35. **H7. Flexibility and Efficiency of use / Severity: 3 / Found by: D**

Task #2: Learn from Others

Description: There may be a lack of shortcuts or accelerators for expert users who want to quickly navigate through the video feed. The video feed doesn't appeal to expert users who may know most words already and need a specialized section for advanced words/signs.

Rationale: Lack of catering towards users of different proficiency levels.

Fix: Implement system for filtering videos according to proficiency directly in feed rather than just upon downloading the app.

36. **H8. Aesthetic and minimalist design / Severity: 1 / Found by: B**

Task #2: Learn from Others

Description: Buttons and description block content.

Rationale: For Dria's photo, a good portion of it is blocked by the buttons and content description, making it hard to see the actual design.

Fix: Change aspect ratio of video to not be blocked by buttons.

37. **H8. Aesthetic and minimalist design / Severity: 1 / Found by: A**

Task #2: Learn from Others

Description: In comments, if a user is @'ed with their first and last name, the last name appears to look as if it is part of the person's comment.
 I.E. @Arjun Sharma me neither, so cool!

Rationale: People may get confused on where the end of a person's username is and where the comment begins

Fix: Either bold the @ and the username or make it a different color from the rest of the comment

38. **H10. Help and documentation / Severity: 1 / Found by: B**
    Task #2: Learn from Others
    Description: Instructions do not explain what "swipe right" does.
    Rationale: In the previous task, the screen has instructions that tell the user they can swipe right to view other examples of the same vocabulary. However, in this task, the instructions only tell the use they can swipe down to explore. Presumably, the user could do both of these actions in the previous task as well as this one, however the instructions only mention one.
    Fix: Have the instructions describe both that the user can swipe down as well as right.
39. **H11. Accessible Design / Severity: 2 / Found by: A**
    Task #2 Learn from Others
    Description: In comments, the transparent background leads to inconsistent legibility of words. Some comments are easier to read than others as the colors in the video conflict with the colors of the words in the comment.
    Rationale: If the background of the video is ever a dark color, the comments that overlay this area will be very difficult to read for a person with low vision/in general. Results in inconsistent degrees of legibility based on the video's color.
    Fix: Make the comment section opaque, not transparent.

Task #3: Share Your Own Story

40. **H1. Visibility of system status / Severity: 1 / Found by: A, B**
    Task #3: Share Your Own Story
    Description: After posting, it is unclear which tab you are in.
    Rationale: At all times, the app highlights which tab you are in by coloring in a graphic at the bottom of the screen. However, after you have posted content, you are at your profile, but this button is not highlighted.
    Fix: Highlight profile button.
41. **H1. Visibility of system status / Severity: 2 / Found by: B, C**
    Task #3: Share Your Own Story
    Description: System indicates that you are uploading, but does not confirm once your post has been shared.
    Rationale: The system takes care to play an animation that shows how far the upload has progressed, however it does not update the user once the post is shared, and thus the user must look at their profile to see if the post is there in order to know if posting was successful or not.
    Fix: Display a message or graphic stating that the post has been shared once upload completes.
42. **H1. Visibility of system status / Severity: 1 / Found by: D**
    Task #3: Share Your Own Story
    Description: The transition from the recording screen to the next screen lacks

clear feedback, and users may not be informed about the status of their recording.

Rationale: The checkmark feedback isn't as clear as it can be, so users are not getting the best feedback on what is going on.

Fix: Use different symbols/alerts to alert users that they are ready to post their video. Consider using a different button than the record button to confirm moving on to the next step.

43. **H2: Match between the System and World / Severity: 2 / Found by: C**
    Task #3: Share Your Own Story
    Description: The term 'New Definition' when posting a new video could be misleading.
    Rationale: 'New Definition' and 'Definition' leads me to believe that the users is creating an entirely new sign instead of offering an interpretation of a previously defined sign, which may be misleading regarding the actual purpose of the application.
    Fix: Change the terminology present to 'New Video' or some other terminology.

44. **H3. User control and freedom / Severity: 3 / Found by: A, B, C**
    Task #3: Share Your Own Story
    Description: No option to save draft of post.
    Rationale: If a user wants to check content in the middle of creating a post, they cannot save said post as a draft, and instead must exit out, losing their progress entirely.
    Fix: Allow users the option of saving a draft of their post.

45. **H3. User control and freedom / Severity: 3 / Found by: D**
    Task #3: Share Your Own Story
    Description: Limited options, such as the inability to retake a video, violate the user's freedom to control their actions.
    Rationale: Users should have the flexibility to correct mistakes or make adjustments during the recording process. Limiting options may make users feel restricted and hinder their control over the task.
    Fix: Include additional options, such as a "Retake" button, giving users more control over the recording process and allowing them to correct mistakes.

46. **H4. Consistency and standards / Severity: 1 / Found by: B**
    Task #3: Share Your Own Story
    Description: Users can "follow" both words and other users.
    Rationale: The term "follow" is overloaded, in the sense that users can follow other users (who are then displaying under the "following" label in the profile), but they can also follow words, which show up in a different place. Using this same term for the different actions may lead to confusion on the user's end.
    Fix: Use a different term for following users vs. words.

47. **H4: Consistency and Standards / Severity : 3 / Found By: C**
    Task #3: Share Your Own Story
    Description: The selectable parameters only include 'Add Categories', 'Add Signs', and 'Add Music'.

Rationale: This may cause significant misrepresentation in terms of the content that's uploaded.

Fix: Add additional selectable parameters similar to the 'Search by Sign' function, including 'Palm Orientation', 'Select Body Location', and 'Movement' for the user to choose from prior to sharing a video.

48. **H4. Consistency and standards / Severity: 1 / Found by: B, C**
Task #3: Share Your Own Story
Description: Users can add friends, but also have followers/following.
Rationale: When first opening the app, there is the option to add friends. However, when you view your profile, there is a following/followers dichotomy. This is slightly confusing, as the two terms denote inconsistent methods of connecting with other users. For instance, one can add friends on Facebook, and this is a mutual action. However, on Instagram, one can follow another user, while that same user does not follow them back.
Fix: Only use the term "adding" or only use the term "following" when it comes to connecting with other users.

49. **H4: Consistency and Standards / Severity: 2 / Found by: C**
Task #3: Share Your Own Story
Description: In the profile page, there's a back button in the upper left hand corner.
Rationale: This may cause user confusion; the user was unsure what exactly the back button would be referencing in this case. Furthermore, the video viewing page and the search page do not have corresponding exit features.
Fix: Delete the back button in the profile page following the completion of account creation.

50. **H4: Consistency and Standards / Severity: 2 / Found by: D**
Task #3: Share Your Own Story
Description: The plus icon may not clearly convey the action of recording a video, leading to a potential mismatch between the symbol and users' expectations.
Rationale: Users may wonder what action the symbol represents, the use of the chosen symbol for recording a video creates inconsistencies from other more common apps.
Fix: Use a more universally recognized symbol for video recording, such as a camera icon. This aligns the system with real-world conventions, making the action more intuitive.

51. **H5. Error Prevention / Severity: 1 / Found by: A, B**
Task #3: Share Your Own Story
Description: Once you post a video, descriptors, parameters, and icons will block off parts of the video. This is not shown when you are recording or editing a video.

Rationale: Because it is not shown what parts of the video will be blocked off, there may be critical parts of a video that a creator may unintentionally be blocking by placing content in the bottom right area.
Fix: Add an overlay that shows the creator when they are recording/editing what areas of the video will be blocked off when published due to app layout.

52. **H7. Flexibility and efficiency of use / Severity: 2 / Found by: A, B, C**
Task #3: Share Your Own Story
Description: When you add categories to post a video, it appears the same four categories appear above the fold with the rest needing to be searched. There does not seem to be a custom option for the creator to instantly have access to their most used categories without having to search them up.
Rationale: If a creator has a specific niche (i.e. sports) that they post about, they will always have to spend time searching for the category rather than having it be readily available above the fold.
Fix: Customize the categories section based on frequency of use.

53. **H8. Aesthetic and minimalist designs / Severity: 1 / Found by: A:**
Task #3: Share Your Own Story
Description: In a person's profile, the definitions and learned tabs are misaligned from the center
Rationale: For aesthetic purposes it would look better for the two tabs to be centered.
Fix: Center the two tabs

54. **H8. Aesthetic and minimalist design / Severity: 1 / Found by: A, B**
Task #3: Share Your Own Story
Description: Instructions on swiping down/swiping right do not need to be ever present after the first few times.
Rationale: After seeing the instructions to swipe down/right once, they begin to take up more space than is warranted, and do not need to be readily displayed.
Fix: Only show the instructions on swiping down/right the first time the users interact with this feature.

55. **H11. Accessible design / Severity: 1 / Found by: B**
Task #3: Share Your Own Story
Description: Font size for profile definitions, followers, and following are slightly small.
Rationale: When viewing the profile, the labels and numbers for definitions, followers, and following might be too small for a user with difficulty reading small text sizes.
Fix: Increase font sizes of these numbers and their labels.

All Tasks

56. *H2:* **Match between System and World / Severity: 3 / Found by: C**
Task: General
Description: The order of the buttons is a little ambiguous and could be better organized.

Rationale: Other social media apps such as Tik Tok and Instagram have the home button first, the creation button in the middle with the 'reels' button in-between the creation button and the profile. Utilizing this format, may make the app more intuitive for new users.
Fix: Change the order of the buttons.

57. *Heuristic 2:* **Match between System and World / Severity: 3 / Found by: C**
Task: General
Description: The profile shows the word 'learned', but there is no corresponding 'liked' button when traversing through videos.
Rationale: The discrepancy between the 'liked' and 'learned' is confusing to the user; should there be another button corresponding to the 'liked' videos in the profile or an additional button in the videos page corresponding to the 'learned' videos.
Fix: Either change the terminology from 'Learned' to 'Liked' or change the associated 'like' icon.

58. *H4:* **Consistency and Standards / Severity: 1 / Found by: C**
Task: General
Description: The 'add categories' portion of the video upload process needs to be standardized in terms of format.
Rationale: The format of the selectable content should remain consistent throughout the entirety of the application.
Fix: In the Profile Page, give the categories (Movies, Adventure, Transportation, etc.) a gray border.

59. *H4:* **Consistency and Standards / Severity: 1 / Found by: C**
Task: General
Description: The 'Search by Sign' has an initial selectable category called 'Handshape', but the parameter selection before the video is shared includes the language 'Add Signs'
Rationale: The format across pages should remain consistent.
Fix: Choose one word to define that category and populate it's usage throughout the application.

60. *H8:* **Aesthetic and Minimalist Design / Severity: 1 / Found by: C**
Task: General
Description: Bottom icons in the footer should have an outline.
Rationale: The white icons against a light blue background can cause some visual discomfort.
Fix: Add a black outline around the icons.

61. *H10:* **Help and Documentation / Severity : 3 / Found by: C**
Task: General

Description: Missing help page or tutorial.

Rationale: Given the general public's lack of familiarity with ASL and the terminology within the community, it could be helpful to include an introductory tutorial into the app's features and different components.

Fix: Add a high-level introductory tutorial or FAQ in settings.

62. **H11. Accessible / Severity: 2 / Found by: A**

    Task: Signing up

    Description: In the trending tab, the names of the videos are small and white w/o any highlighting, placed directly on the thumbnail

    Rationale: If the thumbnail of the video is ever a light color, the text would be very difficult to read for a person with low vision/in general

    Fix: Add a consistent backdrop behind each title. This can be done by either putting the names outside of the thumbnails altogether, or adding a small rectangle/highlighter behind the title if choosing to keep it on the thumbnail.

Extra Violations

63. **H1: Visibility of System Status / Severity: 1 / Found by: C**

    Task: Signing Up

    Description: No confirmation of account creation, the user moves straight to the exploring videos page.

    Rationale: After the user selects the create account button, the user is immediately taken to the search by sign page. The user may not understand that their account has been successfully created.

    Fix: Redirect the user to the profile page instead and begin a tutorial on the platform's various aspects to increase user understanding.

64. **H3. User Control and Freedom / Severity: 3 / Found by: A, C**

    Task: Signing up

    Description: In all stages of signing up, whenever a user moves on to the next screen they have no way of going back to a previous screen to alter their answers

    Rationale: Users have no way to change a previously inputted answer, as such any mistakes made in signing up are permanent

    Fix: Add a back/previous button at every stage, and/or have a "review and edit" page at the end of sign-up.

65. **H5. Error prevention / Severity: 2 / Found by: A**

    Task: Signing up

    Description: In the "Mobile Number" input section, the current formatting does not prevent errors if not inputted in the manner the site accepts

    Rationale: There are many different ways people insert phone numbers, though sites may only accept one form. As mentioned in class, it is helpful to format phone input to make clear what form is accepted and prevent errors.

    Fix: Insert an example of the phone number accepted (i.e 213-445-1342), or reformat the input box into intuitive sections where numbers are inserted.

66. **H8: Aesthetic and Minimalist Design / Severity: 1 / Found by: C**
    Task: Signing up
    Description: The 'sign up' button is not consistent with the other capitalization tendencies on the page.

67. **H8: Aesthetic and Minimalist Design / Severity: 1 / Found by: C**
    Task: Signing up
    Description: Empty space between the top of the photo and the beginning of the user profile.
    Rationale: There should be less white space above the profile information.
    Fix: Reduce the amount of white space.
    Rationale: The 'sign up' button has different capitalization properties than the corresponding descriptors for each selectable button (i.e. 'Sign up' vs. 'Full Name', 'Mobile Number or Email').
    Fix: Standardized capitalization methods.

3. Summary of Violations

A Google Sheet Template is provided here to help you calculate numbers.

Category	# Viol. (sev 0)	# Viol. (sev 1)	# Viol. (sev 2)	# Viol. (sev 3)	# Viol. (sev 4)	# Viol. (total)
H1: Visibility of Status	0	4	1	0	0	5
H2: Match Sys & World	0	0	4	3	0	7
H3: User Control	0	0	5	5	0	10
H4: Consistency & Standards	0	7	4	3	2	16
H5: Error Prevention	0	1	2	0	0	3
H6: Recognition not Recall	0	0	2	0	0	2
H7: Efficiency of Use	0	1	2	1	0	4
H8: Minimalist Design	0	8	2	0	0	10
H9: Help Users with Errors	0	0	0	0	0	0
H10: Help & Documentation	0	1	0	2	0	3
H11: Accessible	0	2	4	0	0	6
H12: Value Alignment & Inclusion	0	1	0	0	0	1
Total Violations by Severity	**0**	**25**	**26**	**14**	**2**	**67**

Note: **check your answer for the green box by making sure the sum of the last column is equal to the sum of the last row (not including the green box)**

4. Evaluation Statistics (in %)

Severity / Evaluator	Evaluator A [your name]	Evaluator B [your name]	Evaluator C [your name]	Evaluator D
Sev. 0 Ex: Eval A count / total sevs 0 in table #3	0%	0%	0%	0%

Sev. 1 Ex: Eval A count / total sevs 1 in table #3	29.17%	54.17%	45.83%	4.00%
Sev. 2 Ex: Eval A count / total sevs 2 in table #3	45.45%	27.27%	63.63%	19.23%
Sev. 3 Ex: Eval A count / total sevs 3 in table #3	33.33%	33.33%	77.78%	35.71%
Sev. 4 Ex: Eval A count / total sevs 4 in table #3	100%	50%	50%	0%
Total (sevs. 3 & 4) Ex: Eval A = sum(sev 3: sev 4 counts) / sum(sev 3: sev 4 in table #3)	45.45%	36.36%	72.72%	31.25%
Total (all severity levels) Ex: Eval A total sev count / total sevs (green cell) in table #3	38.60%	40.35%	57.89%	16.42%

*Note that the bottom rows are *not* calculated by adding the numbers above it.

5. Summary Recommendations

We adore the concept of the app! Overall, TrainGone has a very intuitive design which makes completing tasks relatively straightforward. It is consistent with many of the conventions of popular social media, which make it easy to pick up this app and focus on the more novel features, like the reverse dictionary. The UI is sleek and the dictionary itself presents an innovative way to translate perceived ASL signs into searchable queries. The main trends we noticed involved a consistent use of color, icons, with a clear sense of branding. The design is clean, and for an idea that can easily become overwhelming and cluttered (by virtue of how many signs exist in the world), TrainGone does an amazing job at streamlining the reverse-dictionary process in a very simple and easy-to-follow manner. As for things that could be improved, the heuristic evaluation reveals trends in violations in aesthetics (centering, organizing), consistency (icons, placements), and user control (scrolling, going back, editing), impacting overall usability across various tasks. Addressing these issues comprehensively will contribute to a more intuitive, accessible, and user-friendly interface. Furthermore, there were some features—such as saving recently searched

terms—that could be added to contribute to the efficiency of the app. One important note we also wanted to stress was being mindful about the skin tone used to represent the standard hand, as this was a constant throughout all three tasks and could perpetuate harmful stereotypes about what the "standard" person looks like. Again, these are small fixes, but they go a long way in helping the app embody its underlying value in inclusivity.

There were also some notes we had which did not fall neatly into the heuristics. For one, we feel like there's a lot of cognitive switching between actions required from the user with swiping both left/right, and up/down, and switching between swiping and pressing buttons, which we feel will be a challenge to address. With so much interaction/user input needed, we do think that at some points documentation is needed for new users to understand what is needed (maybe a quick introduction at the start, or with an info section with parameters). Furthermore, for many screens, although they are organized by groupings, we feel like the separation could be further improved with small dividers (like in comments, home page, etc). We also wished that there was a way to see all of my liked/saved videos individually, rather than following the full word. Additionally, it was unclear to us exactly what we were doing when we clicked the pin to "follow" a word. Given that you can follow users, follow words, and add friends, it became somewhat unclear what all of these actions meant and how they related to each other. We also noticed that, when creating a new definition, one could only indicate whether it was a noun, adjective, or verb, which left out some additional choices like adverbs. Lastly, we were unsure of what the "Learned" tab referred to on the profile page. It seems like you can learn a word by viewing videos of it, but it wasn't clear if this tab would include all the words you had ever seen, or just the ones you had searched. This could be made more clear by perhaps having a message that says "added to Learned," whenever a word is added.

Ultimately, we think the main ways the design could be improved would be to stick to clear guidelines of consistency for icons, actions, and buttons, while also making the app as intuitive and efficient for beginners and ASL experts alike. Changes like these would help create a more coherent branding, while also bringing the app to the next level of intuitive and aesthetic design.

Severity Ratings

0 - not a usability problem
1 - cosmetic problem
2 - minor usability problem
3 - major usability problem; important to fix
4 - usability catastrophe; imperative to fix

Heuristics

H1: Visibility of System Status
- Keep users informed about what is going on

H2: Match Between System & Real World
- Speak the users' language
- Follow real world conventions

H3: User Control & Freedom
- "Exits" for mistaken choices, undo, redo
- Don't force down fixed paths

H4: Consistency & Standards
- Words, actions, and UI elements should be consistent across the entire platform
- Follow platform and industry conventions

H5: Error Prevention
- Minimize error-prone conditions
- Remove memory burdens, support undoing, and warn your users when necessary

H6: Recognition Rather Than Recall
- Make objects, actions, options, & directions visible or easily retrievable

H7: Flexibility & Efficiency of Use
- Accelerators for experts (e.g., gestures, keyboard shortcuts)
- Allow users to tailor frequent actions (e.g., macros)

H8: Aesthetic & Minimalist Design
- No irrelevant information. Focus on the essentials.

H9: Help Users Recognize, Diagnose, & Recover from Errors
- Error messages in plain language
- Precisely indicate the problem
- Constructively suggest a solution

H10: Help & Documentation
- Easy to search
- Focused on the user's task
- List concrete steps to carry out
- Not too large

H11: Accessible
- Users can interact with the system using alternative input methods.
- Content is legible with distinguishable contrast and text size.
- Key information is upfront and not nested for screen readers.

- Purely visual or auditory content has text-based alternatives for users with low vision and low hearing.

H12: Value Alignment and Inclusion
- The design should encode values that users can understand and relate to.
- It should make a diverse group of users feel included and respected.
- The design should prevent the reproduction of pre-existing inequities and not create additional burdens for members of disadvantaged populations.