***Task 1:*** **Allow users to personalize their experience to their pet(s)**

- **Screens and functions:** The "Home" screen is where the user can update the background image to be of their pet(s). Beyond the Figma design and pertaining to the physical element, the user has the option to have the stuffed animal customized to their pet.
- **Vision:** This feature can be accessed by going to the Gallery section and clicking on any image. An option to update the background image will appear. In terms of the physical element of our design, we envision users having the option to make their stuffed animal look like their pet with the collar containing three buttons and the screen interface on it's belly.
- **Design Decisions:**
    - **Persona and requirements:** From our user interviews we found that the users had their pets as their phone wallpaper occasionally. We also found out that the users were not satisfied with the interaction with other pets on campus and that this doesn't replace the interaction they desire with their pets.
    - **Feedback:** From the paper prototype feedback, there was positive feedback with having the stuffed animal because currently the user only sees the pet on the phone and thus she noted that she misses the physical element of the interaction.
    - **Design tradeoffs/alternatives:** There was an option to have an app on the phone but because the physical element is vital to the design we opted to have it on the stuffed animal. In addition, there was a design alternative of adding the ability to register multiple pets on the app to future demonstrate personalization on the app for the user's pet, but we decided against it to maintain more simplicity for our

user, especially as the majority of our user interviews had users with only one pet back at home.

- **Usability and UX principles, design guidelines, common UI patterns, etc.:**

  The background feature would follow common UI patterns and the Usability guideline of standardization whereby users have the ability to customize their phone and laptop wallpaper screens. It would also contribute to the emotional User Experience on the app, as having this personalization aspect to the screen can make it become more welcoming to the users.

### *Task 2:* Allow users to view their pet in real time

- **Screens and functions:** A screen will indicate that it is showing live footage of the pet back at home. This feature can be accessed through the stuffed animal's collar by pressing a button. The screen also allows the user to take snapshots and will record clips automatically as the live footage is playing. These photos and videos can be accessed in the "Gallery."
- **Vision:** The user will have a desire to see what their pet is up to as well as wanting to engage with them somehow. After pressing the button on the stuffed animal's collar, they will be happy to see their pet through the screen. If the pet isn't currently in front of the dispenser back at home, the user can press another button on the collar, which dispenses a treat with a sound, providing a signal to attract the pet to the dispenser. After this, the user may receive a feeling of comfort and can take snapshots to save and look at later.
- **Design Decisions:**

- **Persona and requirements:** Some users stated that they wouldn't want to put in a lot of effort just to see their pet and would like quick access to them. The live feature provides them with this quick access with the push of a button at any given moment. The ability to take snapshots on command is almost like a metaphor, something the user would do in real life in front of their pet back at home. It substitutes for not being able to physically interact with them but still be able to see them through a screen and take their own photos instead of family sending it to them (which was the typical experience of most users).
- **Feedback:** Feedback from the users justified the live feature and agreed that there shouldn't be a button on the screen itself to access the footage. It was best to save some functionalities for the collar, so that the user can engage with the stuffed animal in some way. If the button on the collar is pressed at any given moment, the screen will just switch to the "live" screen.
- **Design tradeoffs/alternatives:** The live footage being on the screen can be easier for the user to see and is more manageable than watching the pet through an AR projector, which was the original design idea. The footage on the screen also allowed the snapshot button, which is something that couldn't be implemented through projected visuals unless there was a button somewhere on the collar to take a picture. This, however, would've made the collar overwhelming to use with too many buttons and functions.
- **Usability and UX principles, design guidelines, common UI patterns, etc.:** The "live" at the top left of the screen will be blinking, supporting visibility for the user. It's a good indicator and a common symbol to signify that the user is

watching live footage. The singular button for snapshots and the bottom center of the screen supports natural mapping and error recovery since it doesn't really give the user that many options to press buttons and make mistakes.

### *Task 3:* Allow users to communicate with their family on refilling treats

- **Screens and functions:** The "Treat Tracking" and "Notify Family 1-4" screens can be used in conjunction to allow the user to communicate with their family when the user notes that the treat dispenser is low on treats.
- **Vision:** The user can go to the "Treat Tracking" screen at any time to see how full the dispenser is. When they notice that the dispenser is less full than desired, they can then go to the "Notify Family 1 " screen and message their family about the dispenser being low. The family will get the notification, fill up the dispenser, and then message the user back about having refilled it as seen in screens "Notify Family 2-4". The user can respond in thanks and check that the dispenser was filled as in "Treat Tracking Full". This allows the user and family to get feedback on the dispenser being properly filled up and it allows them to communicate with each other.
- **Design Decisions:**
    - **Persona & requirements:** In A2 we found that users often talk to their family about their pets, so we wanted to ensure that our design still allowed them to communicate with each other.
    - **Feedback:** Based on the feedback from the paper prototype, we discovered that users wanted more feedback on their actions. As such, by implementing a messaging system, users could get confirmation that the treat dispenser was

actually filled up by the parents. Furthermore, the messaging system allows the user and family to have higher-quality interactions.

- **Design tradeoffs/alternatives:** Initially, in the paper prototype, we had a button on the stuffed animal's collar that dispensed the treat. However, as that resulted in little feedback and didn't have room for error recovery, we decided to change this to a messaging system that allows more for content. The design does require the user to do a bit more work with typing out the message, but we believe that the quality of the interactions is more valuable. Another alternative would be to not include the messaging system on the stuffed animal's screen itself and instead force the users to use their phones, but we wanted to consolidate the features to streamline the task flow.
- **Usability and UX principles, design guidelines, common UI patterns, etc.:** The new messaging system provides error recovery as the user can follow-up with the family if they prematurely alert them. Furthermore, it provides a sense of natural mapping as the user can simply switch screens going to the next tab on the right. The UI pattern of the messaging screen itself is very similar to those of messaging apps, as that is standard and familiar to the user.

### *Task 4:* Allow users to view previous memories of their pet

- **Screens and functions:** The "Gallery" screen allows users to view both the automatically recorded videos and the intentionally taken photos of their pet on the interface in one place.

- **Vision:** Users would go to this page when they are not actively engaging with their pet through the use of the Live AR and treat giving features but instead do not have the time or energy to fully engage with their pet through treat giving. Users would then go to this page when they want to recall any funny or sweet pictures or videos of moments they had with their pet through this technology.
- **Design Decisions:**
    - **Persona & requirements:** Developed through our user interviews, our persona May has a photo album on her phone to view and look back on videos of her dog Rocky. Additionally, the user requirements of being specific to the user's pet, being flexible, and allowing for consistent engagement are fulfilled through this design choice. Allowing users to view a photo and video album of their pet remains consistent with the wants of our persona while also allowing them to choose when they can view these comforting memories of their specific pet at home on their own schedule, especially as their energy levels or schedule can affect if they can see their pet in Live time or not with late schedules conflicting with their pet's sleeping schedule.
    - **Feedback:** The feedback from the paper prototype demonstrated that this feature was appreciated, as it would align with the user's current routine of saving and looking back on videos and images of their pet. She also likes the fact that the device automatically records videos and saves these videos in the album as it removes a burden off of the users in possibly forgetting to record these moments and missing out on having these memories to look back on.

- **Design tradeoffs/alternatives:** Some design tradeoffs made in this implementation is the fact that this gallery will be conducted on a smaller screen, as this interface would be implemented on the stomach area of a stuffed animal. In addition, one alternative our design initially focused on was not including this feature to include simplicity in our design. However, it is a priority for users to have memories to look back on of their pets especially as it is something natural and integrated in a user's life in terms of their pet already.
- **Usability and UX principles, design guidelines, common UI patterns, etc.:** This design's functions would also correspond to the standardization aspect of UI, where users are used to the ability to browse and mark their favorite clips or images on devices and would appreciate this feature being accessible on this device's interface as well. In addition, the emotional aspect of the User Experience would be improved, as it would invoke a feeling of security and comfort in the users by knowing that the captured Live recordings of their pet would not just be fleeting memories they wouldn't be able to look back on.