

Yudelca Ogando
MGT 9967-Tech Innovation & Design
Assignment #1
October 9, 2023

Problem

When you live in a household with individuals that have special needs whether that is elderly, someone with a mental disability and/or a disorder, it's challenging to take care of their everyday needs especially when working fulltime. These individuals require more dedication and need your time, especially getting ready in the morning and with constant reminders throughout the day. The mornings are specifically hectic as everyone needs to be ready and get out of the house on time to reach their destinations. It's an overall exhausting experience for caregivers to be constantly talking, screaming, and becoming frustrated while saying reminders, that take away from them being able to leave on time.

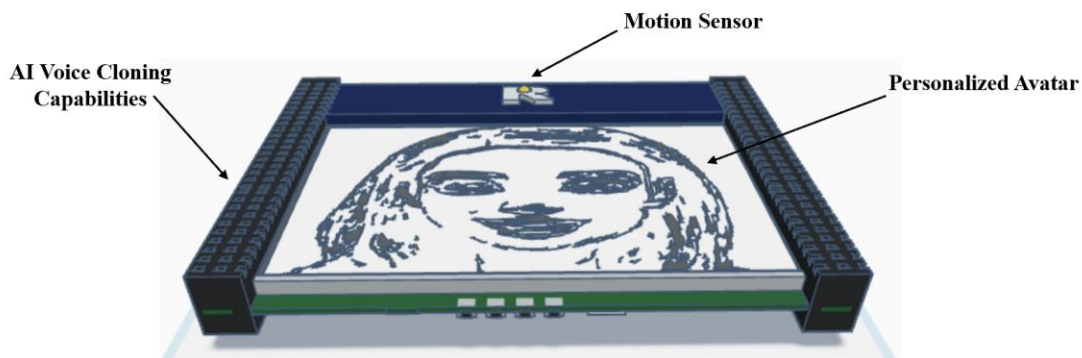
Parents with children diagnosed with ADHD understand the pains of constantly reminding them about completing homework assignments and staying organized. Although this condition can be mitigated using medications, not everyone with this condition is on medications. Therefore, having an alternative is imperative, as individuals with this condition:^[1]

- Often has trouble holding attention on tasks or play activities.
- Often does not seem to listen when spoken to directly.
- Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (e.g., loses focus, side-tracked).
- Often has trouble organizing tasks and activities.
- Often avoids, dislikes, or is reluctant to do tasks that require mental effort over a long period of time (such as schoolwork or homework).

- Often loses things necessary for tasks and activities (e.g., school materials, pencils, books, tools, wallets, keys, paperwork, eyeglasses, mobile telephones).
- Is often easily distracted.
- Is often forgetful in daily activities.

Therefore, to solve this problem, a combination of technological advances can be used. People enjoy using AI generated tools such as Siri and Alexa, that were developed by Apple and Google. Both tools can set reminders for forgetful individuals like those with ADHD. However, these types of individuals are dependent on normal cues as well as apprehensive about changes, thus, they would rather stay with what they know instead of adapting to the unknown.

Solution – *Reminder Display Screen/Audio Device*



The specifications of this device were designed specifically for the application of the parent and the child as the end user. There is a display screen with an avatar image, generated through facial recognition technology to produce an image that resembles the parent; the “development of algorithm which can automatically extract a face from an image, modify it, characterize it in terms of high level properties, and apply it to the creation of a personalized

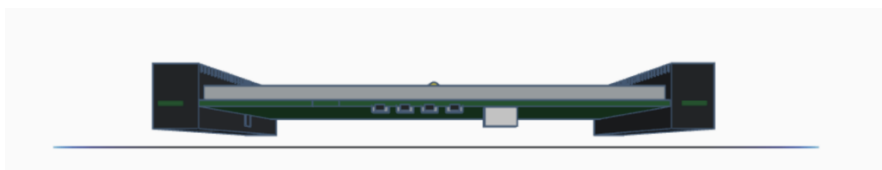
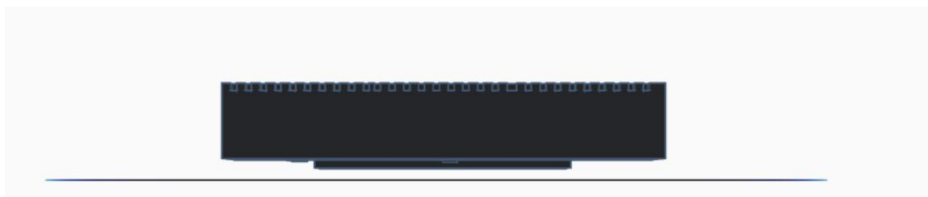
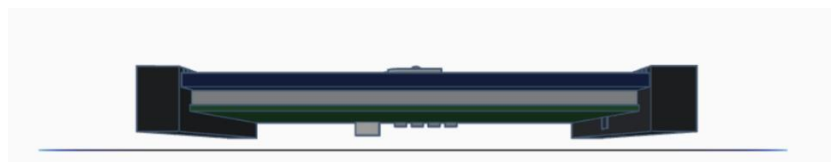
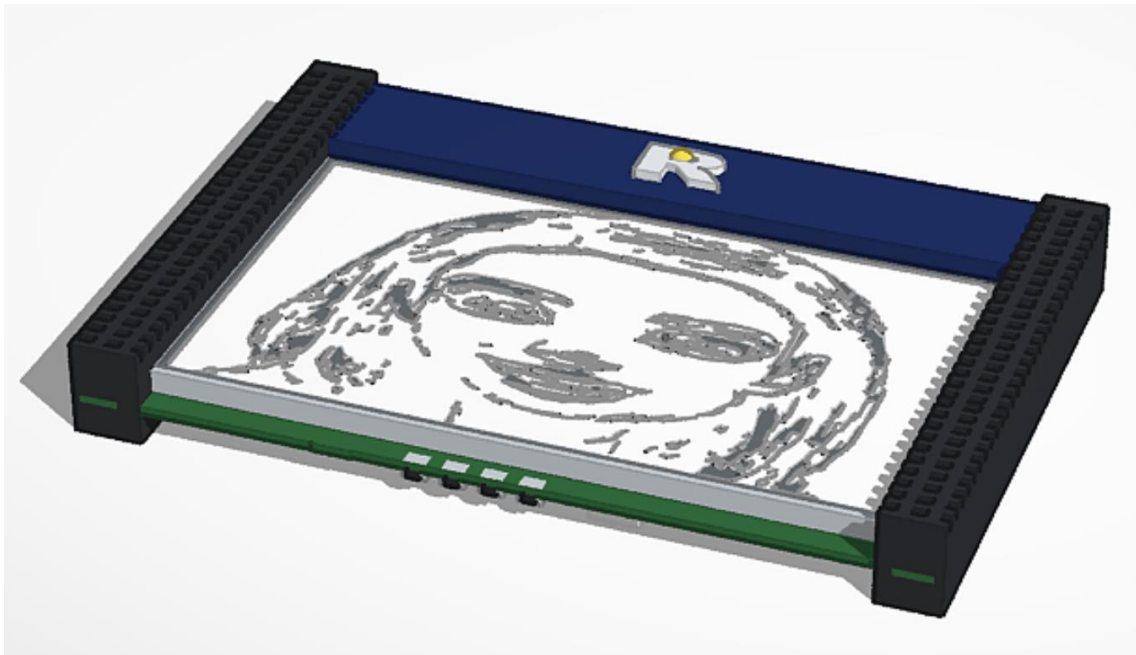
avatar.”^[3] Having the parent on display will aid the child into feeling as if it were actually their parent. On the audio side, when using this product, the parent will be able to use AI generated voice cloning technology: “AI voice cloning is a process that uses AI and machine learning algorithms to create a digital clone of a human voice. Once you have gone through the process, your voice cloner can put out a realistic rendition of the original voice, saying anything you tell it to.”^[2] Voice cloning technology allows the user to hear what the original person’s voice would sound (through the speakers) like in real life; making it an ideal product, since the child will hear the commands from the device, in the voice they would have heard it if their parent spoke to them.

This device will also function as a conversation AI, a “set of technologies behind automated messaging and speech-enabled applications that offer human-like interactions between computers and humans.”^[4] Where the parent would type into an application the commands, and prepare the settings required for the child. For example, this device can be used as an Alarm clock where the parent will program it to announce to the child at specific set time to wake up, they could also set snooze by continuously calling on child until they move out of bed. The device will be built with Bluetooth, Wi-Fi, and motion sensor capabilities. Thus, for example, the motion sensor can inform the parent of when the child is up, getting ready and when they left for school. The conversation AI tool would then be able to “communicate like a human by recognizing speech and text, understanding intent, deciphering different languages, and responding in a way that mimics human conversation.”^[4]

Overall, this device’s goal is to help the parent be there for their child by programming the device to mimic their voice, set alarms, reminders and communicate with the child in the absence of the parent. The idea is for working parents feel confidence that their child is making

progress in leaving on time, organizing their workspace, submitting their homework assignments while not forgetting their keys.

Tinker CAD Design



References

1. Centers for Disease Control and Prevention. (2023, September 27). *Symptoms and diagnosis of ADHD*. Centers for Disease Control and Prevention. <https://www.cdc.gov/ncbddd/adhd/diagnosis.html>
2. *Ai Voice Cloning: All you need to know*. LOVO AI. (n.d.). <https://lovo.ai/post/ai-voice-cloning-what-it-is-and-how-it-works>
3. Lyons, Michael & Plante, Andre & Jehan, Sebastien & Inoue, Seiki & Akamatsu, Shigeru. (1998). *Avatar creation using automatic face recognition*.
4. *Conversational ai: What is conversational ai?*. Interactions. (2023, August 23). <https://www.interactions.com/conversational-ai/>