

1. PROBLEM STATEMENT

Each person's morning routine is a tone-setter for the day that follows, and no one should start their day feeling rushed or stressed before even making it to work. Mr-r Mr-r is an AI-integrated touchscreen mirror that aims to streamline the process of getting ready while also bringing entertainment, useful information, and enjoyment to the user.

1.1. Need Statement

According to YouGov, 30% of Americans spend over a week out of each year getting ready in the morning [1]. This could be time well spent, as a well-defined morning routine is associated with highly productive people [2]. However, 51% of people report feeling 'overwhelmed' after waking up to start their morning routines [3]. It has also been found that 17% of Americans aged 18-29 check the weather less than once a week before going outside [4]. This can result in people failing to dress properly, prepare for rain, or apply sunscreen when needed. There is a need for an innovative system that streamlines morning activities, reduces stress, and answers questions users may not have time to consult their smartphones about.

1.2. Objective Statement

Mr-r Mr-r combines an advanced mirror, sporting a personalized digital display, with AI features creating the epitome of a morning assistant that truly reflects the user. Utilizing customizable widgets and speakers, Mr-r Mr-r provides an all-in-one service for entertainment and convenience that allows users to display any information they want – such as weather and news. This innovation streamlines mornings and reduces stress.

1.3. Background and Related Work

The basic concept behind Mr-r Mr-r is to combine a display, two-way mirror, and touchscreen all framed together in that order. AI is then integrated to respond to voice input from the user via a microphone. The AI responds audibly through speakers and visually via on-screen widgets. Currently, the Capstone Smart Mirror is a design that has a similar concept to Mr-r Mr-r. Capstone is a smart mirror that casts the display of another device onto a display screen inside of the mirror [5]. This presents a major difference between Mr-r Mr-r and competing technology; Mr-r Mr-r functions as its own device and does not require an outside device to be cast for display. AI being integrated into the mirror also sets this design apart from other similar products. While many mirrors are customizable in the design process, the creative process usually ends with the final product, whereas Mr-r Mr-r has continuous customization via AI integration. Google Home statistics state that 76% of smart home device owners utilize the AI capabilities of their device weekly, and Mr-r Mr-r aims to leverage this trend to enhance users' morning routines [6]. Some limitations of current designs and technologies include the sizing of mirrors and the utilization of touchscreen. Monetary limitations are also common because of the expensive nature of some of its parts. Mirrors, touchscreen adapters, and single-board computers, like Raspberry PI or Jetson Nano, can all be pricey. No patents currently exist for a smart mirror of Mr-r Mr-r's caliber. The only patent that is relevant to the project was a patent owned by Capstone Smart Mirror that has since expired. Even still, that patent was different from what Mr-r Mr-r is trying to accomplish. In all, Mr-r Mr-r is unique and an advancement of the Smart Mirror market as a whole.

References

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