**1.2 Constraints**

·      Economic

For the project, the cost for supplying a computer and camera must be considered.

·      Environmental

To detect the facial expressions of the patients by the camera properly, the

environment should be bright, and to record the conversations clearly there shouldn’t

be too much noise or other sound in the environment. Other than that, the project itself has no good or bad effect on the environment.

·      Social

To get more accurate results, training data should be diverse enough. The accuracy

of the facial emotion algorithm may change according to the skin color, any

disorder on the face, social norms and cultural differences in terms of the

expressions of emotions. For instance, a study testing algorithms of facial

emotion recognition revealed that they assigned more negative emotions (anger)

to faces of people of African descent than to other faces. Furthermore, whenever there was ambiguity, the former were scored as angrier (Rhue, 2018).

·      Political

Even though we are going to record the session and use the emotion recognition

system if the patient has permission, outside of our project the usage of the

system may invade personal space. Because of that there are some places where

emotion recognition is prohibited by law. In such places our project could not be used.

·      Ethical

To use the system over a patient, permission of that patient must be obtained. Kayıt

ve bilgilerin kullanılması

Video şifrelenecek 6 ay tutulacak, 3. Parti ve kişilerle paylaşılmayacak.

·      Health and safety

Other than the permission, there should be a security system to prevent outside access rather than the psychologists who are the users of the system, to the records and the analysis of the patients.

Our project has no bad effect on the health and safety of the people.

·      Manufacturability

To manufacture the system set up easily, a computer, camera and internet connection is needed. Yazılım bilgisayara set up edilecek.

·      Sustainability

Facial recognition technology continues to evolve. The system should be updated over time tokeep up with the developments and to get better results.

1.3 Professional and Ethical Issues

Security and Privacy Issues

Users can only be logged in with the correct credentials including their username and password. While software malfunctions, data security may also be jeopardized , posing the risk of data leakage that are outside the therapist's management..Apart from that, all the files and videos we keep in our database are encrypted and closed to outside access. Patient information will not be used for advertising purposes. It will not be shared with 3rd party software. If the patient consents, this person's data will be used to train the AI.

Issues with Informed Consent

MAI Therapist needs a specific kind of explicit consent because of the various ways that it differs from classical in-person treatment (such as technological and security obligations). It could be challenging to ascertain the client's competence to offer permission under the law or to judge their mindset. Since we will be recording the patient with a camera during therapy, the person's explicit consent must be obtained prior to therapy.

Patient Mentality

The use of an MAI Therapist might not be appropriate for all clients, pathological features, mental illnesses, or challenges; on occasion, it may even be associated with complications, particularly in cases of severe mental disorders or in clients who seem to be completely dysfunctional and/or a danger to the patient or somebody else.

2. Requirements

 → video camera, yapay zeka, görüntü işleme,

1. Application should be able to record the session.

2. Application should be able to identify the patient's emotions.

3. Application should be able to identify the patient's gestures.

4. Application should be able to identify the patient's speech.

5. Application should be able to identify the patient's facial expressions.

6. Application should be able to convert voice to text.

7. Application should be able to analyze the therapist's questions.

8. Application should be able to analyze the patient's answers.

9. Application should be able to provide a report to the therapist.

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