

# AMIGO: Your Second Self

PROJECT SYNOPSIS

OF AMIGO: Your Second Self

**BACHELOR OF TECHNOLOGY**

**COMPUTER SCIENCE AND ENGINEERING**

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## **ABSTRACT**

Depression is classified as a mood disorder. It may be described as feelings of sadness, loss, or anger that interfere with a person's everyday activities. People experience depression in unusual ways. It may interfere with your daily work, resulting in lost time and lower productivity. It can also influence relationships and some chronic health conditions. One of the major reasons of depression is loneliness.

Loneliness leads to poorer physical and mental health. Loneliness has been defined in diverse ways. A common definition is "A state of solitude or being alone." The other definition is "Loneliness is not necessarily about being alone. Instead, "it is the perception of being alone and isolated that matters most" and is "a state of mind." "Inability to find meaning in one's life," "Feeling of negative and unpleasant" and "A subjective, negative feeling related to the deficient social relations" "A feeling of disconnectedness or isolation." etc., are the other ways to define loneliness. It is reported to be more dangerous than smoking; high degree of loneliness precipitates suicidal ideation and para-suicide, Alzheimer's disease, and other dementia and adversely affects the immune and cardio-vascular system. It is an accepted opinion that loneliness results in a decline of well-being and has an adverse effect on physical health, through immunologic impairment or neuro-endocrine changes. Loneliness is thus, among the latent causes of hospitalization and of placement in nursing homes. Loneliness, which leads to distress and dysfunction, may be assessed in many ways and is, thus, can be diagnosed as a disease entity. A lonely person often feels low, helpless, separated, or discriminated; finds difficulty during interactions; feels abandoned and alone.

To address the problems stated above, we propose Amigo, a web app that is meant to help people who are dealing with stress, anxiety, or depression. Whether you are looking to better understand your feelings, or you are experiencing anxiety, depression, or elevated levels of stress, Amigo is designed to help you feel better. Here is the gist of how it works: There is a questionnaire that will help you determine the severity of the symptoms. There is a cognitive behavioral therapy (CBT) portion of the app which can teach you how to dispute overly negative thoughts. There is a thought record that provides strategies for modifying irrational thoughts so you can learn how to think differently. We also propose to make an anonymous chat section, where people from around the world could talk about their feelings without the fear of being judged.

## **MOTIVATION**

Fear, worry, and stress are normal responses to perceived or real threats, and at times when we are faced with uncertainty or the unknown. So, it is normal and understandable that people are experiencing fear in the context of the COVID-19 pandemic.

Added to the fear of contracting the virus in a pandemic such as COVID-19 are the significant changes to our daily lives as our movements are restricted in support of efforts to contain and slow down the spread of the virus. Faced with new realities of working from home, temporary unemployment, home-schooling of children, and lack of physical contact with other family members, friends, and colleagues, it is important that we look after our mental, as well as our physical, health.

We feel that it is high time to address the ever-growing problem of mental illness, which is now fueled by the pandemic. We sincerely believe that our effort can be useful to a lot of people around the world.

## LITERATURE REVIEW

| S. n o | Existing Methodology           | Pros  | Cons   |
|--------|--------------------------------|---|--|
| 1.     | Moodfit                        | <ol style="list-style-type: none"> <li>1. Adaptable based on your goals</li> <li>2. Visual insights with actionable exercises</li> <li>3. Daily reminders to keep you on track.</li> <li>4. Customizable based on your needs and goals</li> </ol> | <ol style="list-style-type: none"> <li>1. Lacks access to professional help.</li> <li>2. May lead to self-diagnose.</li> <li>3. Some advanced features have additional costs.</li> <li>4. Tracking moods can be time-consuming.</li> </ol> |
| 2.     | MoodMission                    | <ol style="list-style-type: none"> <li>1. In-app rewards to increase motivation.</li> <li>2. Evidence-based CBT activities for depression and anxiety.</li> </ol>   | <ol style="list-style-type: none"> <li>1. Options are limited to pre-selected "missions".</li> <li>2. Does not include access to professional help.</li> </ol>   |
| 3.     | Sanvello                       | <ol style="list-style-type: none"> <li>1. Ability to access a licensed therapist when you need more support.</li> <li>2. Costs may be covered by health insurance.</li> </ol>   | <ol style="list-style-type: none"> <li>1. Premium add-on features such as coaching and psychotherapy can be pricey if not covered by insurance.</li> <li>2. Lack of clarity on the credentials of "coaches".</li> </ol>                    |
| 4.     | Depression CBT Self-Help Guide | <ol style="list-style-type: none"> <li>1. Promotes calm with activities and audio elements.</li> <li>2. Free access to all content and activities</li> </ol>  | <ol style="list-style-type: none"> <li>1. Lacks information about the components of CBT.</li> <li>2. Only available on Android devices.</li> </ol>   |
| 5.     | Shine                          | <ol style="list-style-type: none"> <li>1. Calming tools for crisis moments.</li> <li>2. Activities based on empirical research.</li> </ol>  | <ol style="list-style-type: none"> <li>1. No access to professional support</li> <li>2. Challenge activities can sometimes be stress-inducing.</li> </ol>  |

## OBJECTIVES

1. Creating a web-based, anonymous chat application where users can share their feelings to others. A reward-based system for helping other users.
2. Integrating a chatbot based questionnaire to evaluate the user's mental state by passing his answers to a machine learning model.
3. CBT thought record to help change negative thinking.
4. Create a progress chart to track a set of personalized daily goals that are daily mental health workout that include self-care and good practices.
5. Integrate a feature to help do structured breathing exercises to quickly increase a sense of calm.
6. To understand the relationship between user's mood and lifestyle factors like sleep, exercise and nutrition.

## METHODOLOGY

**Group Chat:** When a user registers at Amigo, he/she are provided with a unique user id and password which can be accessed the platform. The user must verify their phone number in order to continue to the chat feature for safety purposes. The username for chat is system generated to ensure anonymity of the user. If other users find the content useful, he/she will be rewarded with badges.

**Questionnaire and Chatbot:** The user may choose to talk to an AI based chatbot which can also assess his mental state through his answers using the ML model. The chatbot will be able to answer most of the questions intelligently.

**Other Features:** Other features include, meditation guide, progress tracker, sleep tracker, and a section with positive articles, audio stories and songs. There will also be an option to seek help from a mental health specialist and a panic button if the user wants to call emergency services.

## REQUIREMENTS

**Frontend:** HTML, CSS, JavaScript, React.js

**Backend:** Node.js

**Database:** MongoDB

**Machine Learning:** Python, TensorFlow

**Code Editors:** VS Code, Google Colab, Spyder

**Cloud Platform:** Microsoft Azure

## BIBLIOGRAPHY

1. Depression, it's symptoms, causes, types and treatment ..., <https://www.elephantjournal.com/2020/08/depression-its-symptomscauses-types-and-treatment/>.
2. *Mental health and COVID-19* - World Health Organization, <https://www.who.int/teams/mental-health-and-substance-use/covid-19>.
3. The 8 Best Mental Health Apps of 2021, <https://www.verywellmind.com/best-mental-health-apps-4692902>.
4. State of the Field of Mental Health Apps, <https://www.sciencedirect.com/science/article/abs/pii/S1077722918300233>.
5. Cognitive-Behavioral Therapy in the Digital Age: Presidential Address, <https://www.sciencedirect.com/science/article/pii/S0005789419300978>.