

E- Counsellor

A customizable real time mobile application for studying the human behavior to manage the amount of stress generated at work location

Seema Bhim Vishwakarma

Asst. Professor

Vidyalankar School of Information Technology
Mumbai, India
9870531944

Madhavi Dilip Amondkar

Asst. Professor

Vidyalankar School of Information Technology
Mumbai, India
9664325803

Abstract

E-counsellor is a mobile based application proposed in the paper with an attempt to alleviate the stress of an individual depending upon the responses entered by him. Techniques used for extracting and understanding the level of stress and relieving measures are normally being used by Counsellors for respiting an individual from stress. The proposed mobile based application makes use of neural network algorithm which works like a human brain and the apt solution or remedies are suggested. In today's world of heavy work load and personal responsibilities people don't visit Counsellors in spite of identifying the need for it. The application proposed in the paper is a mobile app which could be used on a daily basis. The paper concentrates on one area of stress that is related to working environment. The causes of working stress are depicted based on the details gathered from the Counsellor. The proposed system deals with step by step guide like a manual Counsellor for suggesting measures based on neural network which will help a person to relieve stress and motivate an individual. The successful implementation of the project

will result in reducing the time consumed for and estimating the best possible solution for the managing the stress.

Keywords: E-Counsellor, stress alleviation,

E- Counsellor

An application to study the human behavior to manage the amount of stress generated at work location

Introduction

India is going through a mobile revolution with smartphones now outnumbering PCs and desktops and is set to reach 314 million mobile Internet users by 2017. With this popularity of smart phones we are proposing an application which will help people to handle the stress.

E-Counsellor is a mobile based application which will help an individual to alleviate the stress level. The application has taken working environment into consideration and accordingly few of the causes of stress been identified - new work location, new job, Job interview, heavy work pressure, etc.....

As the work pressure increases stress also increases. There is no particular age for it. We don't have any measuring device which will measure the intensity of stress. We as a human can't stop the stress or can't even avoid it as it is a part of emotions. But if we get an opportunity to handle it in a better way then we can able to manage the stress. Human beings have the potential to respond at different situations, they also come across different types of emotions which includes both good as well as bad experiences. These could lead an individual to a state of stress where he can feel that the situation is too difficult to handle or overcome. Our proposed

application will allow user to select the situation from the given set and accordingly they will get some quick DIYs to handle the situations which will automatically relieves their stress.

There are plenty of applications available to manage the stress level but no application guides user to respond to the situations with no track of earlier history. The situations which lead to stress could be more than the ones which have identified. Some of them which is been identified in working people are bill payment, work load, demanding responsibilities from family and work places. But the app keeps on updating its data related to the person on a timely basis so that different types of situations could be extracted. The app motivates an individual to take charge of his life style by suggesting measures for relieving the pressure build up due to stress.

2. Modules

The modules which are included in the proposed application is based on the suggestions and the measures provided by Counsellor. The data inside the modules are customizable based on the user's requirement and responses.

This application is divided into 6 modules.

These modules are as follows,

2.1 User Profile

2.2 Situations

2.3 Feelings

2.4 Remedies

2.1 User's Profile:

1								
2	Hello, Welcome to E-counsellor							
3	<i>Register for free</i>							
4								
5	Name:							
6	Age:							
7	Gender:							
8	Hobby:							
9	Working							
10	Name of the Institute:							
11	Favorite Song:							
12	Favorite Holiday destination:							
13	Best friend:							
14	best memory:							
15	Favorite mob app:							
16	Fav Color							
17	Achievements							

This is required to know the user's personality. All the details will be linked to their respective e-mail ids. Here, user will be asked few questions such as Name, gender, age, hobby, workplace, Favorite songs, favorite holiday destination, best friends, best memory, and favorite mobile application which in turn will help this application to give better responses in the later stage of the application.

Once the user opens this application, he/she will be redirected to Home page. The home page of this application will have 2 buttons such as SIGN UP (For New user) & SIGN IN (For Existing User). New user will see this User Profile window to fill up the details. Already registered user will be redirected to next level. Though, existing user with authentic credentials can update his/her information.

2.2 Situations:

1	
2	E-counsellor
3	<i>Mention the situation</i>
4	New workplace
5	New Project
6	New colleagues
7	New project lead
8	New manager
9	New project partner
10	Work pressure
11	Appreciation/appraisal related
12	Office Politics
13	Uneven distribution of work
14	Lack of innovation

In this module we will mainly focus on adding different situations for a user to select. We are going to consider only one scenario here i.e. Office or Work location where we are going to give a list of incidents which might be the reasons for stress

Situations are like, New work place, new project, New colleagues, new project lead, new manager, new project partner etc. The individuals can select different situations form the module based on which the next module would be generated

2.3 Feelings

1					
2	Sr.	E-counsellor			
3	No.	<i>Tell us what you feel?</i>			
4	1	Are you happy? (Scale from 1-5 i.e High-Low)			
5		1	2	3	4 5
6	2	Are you angry? (Scale from 1-5 i.e High-Low)			
7		1	2	3	4 5
8	3	Are you feeling guilty? (Scale from 1-5 i.e High-Low)			
9		1	2	3	4 5
10	4	Do you feel sad/low?			
11		1	2	3	4 5
12	5	Are you feeling scared?			
13		Scared of loosing job?	Scared of loosing friend or friendship?	Scared of loosing goodwill which you have earned till date?	
14	6	Are you disgusted?			
15		1	2	3	4 5
16	7	are you feeling ashamed/embarassed?			
17		1	2	3	4 5
18	8	Are you expecting or anticipating something? **			
19		anxious			

Once the user selects the ‘situation’ from module 2.2 he/she will redirected to view modules based on the human feelings. Human feelings can be listed as happiness, anger, guilty, sadness, fear, disgust, shameless, anticipation etc. These feelings will be generated from the database based on the prior selections and data entered by the users.

User will get a chance to select one emotion per situation with its level of intensity, whether the user is very happy or extremely sad these priorities and the intensities will act as weight in the neural networks algorithm.

2.4 Self-talk

	A	B	C	D	E	F	G	H	I	J	K	L	
1													
2	E-counsellor												
3	<i>Self-Talk</i>												
4	1) Write New	2) Old Talks	3) Send	4) add image	5) About								
5	This place will be given to the user to write his/her own self talk about the situation...word s limit is 250 or may be as short as possible	Talk1.txt	Bluetooth	Take a photo	What is self-talk? Importance of it.What are the guidelines provided for it?								
6		..	WhatsApp	Add it from gallery									
7		..	ShareIt										
8		..	Mail										
9			Messaging										
10			Hangouts										
11			Google Drive										
12													
13													
14		Note: 1) Write New: This tab will have WRITE & SAVE options. This is going to save the file in TXT format by default in order to save the memory space											
15	2) Old Talks: Here user will get EDIT, DELETE, CLOSE options												
16	3) Send: This will allow user to SEND or FORWARD this talks via available options												
17	4) Add image**: Here user can add image to the file												
18	5) About: about the OPTION i.e. Self-talk												
19						readymade self talk as per the feelings			changed self talk also				
20													

Self-talk is a technique used by many psychiatrists to help the patient to analyze their problems on their own before taking major decisions. This module will allow users to write about the self talks which normally occurs in his mind during a stressful situation so that the talks are in front of him so that the decision making will become easier. User will enter his talks in a systematic manner so that the analysis of negative and positive thoughts could be identified and bifurcated. Self-talk is as simple as listening to what you're saying to yourself each day. Here user can type his self-talk and can also send it across. User can also attach image to it.

2.5 Remedies

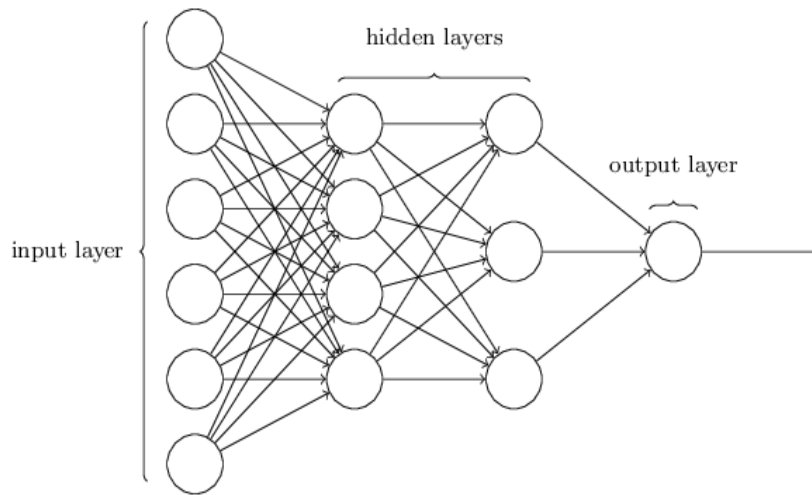
1									
2	E-counsellor								
3	<i>Remedies</i>								
4	<i>As per the situation choosen in Phase 2 & Phase 3</i>								
5			← Phase 3 →						
6	Phase 2 ↓	Q1(happy)	Q2(angry)	Q3(guilt y)	Q4(sad)	Q5(scared)	Q6(disgusted)	Q7(shameles)	Q8(expectation)
7	New workplace	1	1	1	1	1	1	1	1
8	New Project	1							
9	New collegues								
10	New project lead								
11	New manager								
12	New project partner								
13	Work pressure								
14	Appreciation/appraisal related								
15	Office Politics								
16	Uneven distribution of work								
17	Lack of innovation								
18									

Remedies are some suggestions which are stored in the database. Based on the combinations and the output given by the algorithm the best possible remedy is selected and suggested to the users. These remedies depends upon the information entered in the earlier modules. In this phase, the application will give some exercise or task so as to minimize the stress level. Remedies would be like Listening to your favorite song, sketching some cartoons on paper, solving puzzles, just having a power nap, meditation, going for a walk, cooking something creative, or by just having a cup of coffee, feeling better about yourself, Boosting your confidence Building your self-esteem or making friends. These techniques and suggestions will help an individuals to make decisions so that he/she should avoid taking any negative actions

3. Methods of Assessment

Artificial Neural network proposes computation of problem based in the technique which brain uses for computing a solution to a problem. The proposed method intakes many inputs from the users and one output gets generated.

Neural Network is an information processing paradigm that is inspired by the way biological nervous systems, such as the brain, process information. The key element of this paradigm is the novel structure of the information processing system. It is composed of a large number of highly interconnected processing elements (neurones) working in unison to solve specific problem. [1]



<http://neuralnetworksanddeeplearning.com/chap1.html>

3.1 Methods

A neural network consists of an interconnected group of artificial neurons, and it processes data using a relation from the information gathered earlier for computation purpose. Neural networks are non-linear statistical data modeling tools. Neural networks use a different approach to solve problem than that of conventional cognitive approach i.e. the computer has to follow the command and the rules for solving a problem. Neural network concentrates on solving a problem as human does. The system will replicate the human brain with interconnected elements for processing called as neurons. These neurons work simultaneously to solve specific problem. The processing of neural network depends upon learning process. The system learns

through examples and finds out the best possible solution to a problem through the learning process.

The proposed method works on neural network technique wherein the user will enter his user profiles. The details of user profile will form the first layer. The second layer will consist of situations which bring up stressful situations at working environment. Third layers would consist of details about “feelings” and the fourth one will consist of “remedies”. These layers are associated with weight factors based on the input provided by the user. Each new module which is customizable is generated by going through the algorithm. The data which forms the input will be entered by the users having a weight attached with it. This will ultimately help to get the best possible solutions to the users.

$W = \text{input by user } \{1,2,3,4,5\}$

And threshold for each weight will be set based on the priorities assigned by users while collecting details.

The data will keep on updating based on the inputs given by the user and the priorities set by the them. The general patterns keep on evaluating to produce better output in neural network creating an inter linkage. The entire flow is depicted in the figure 1 below

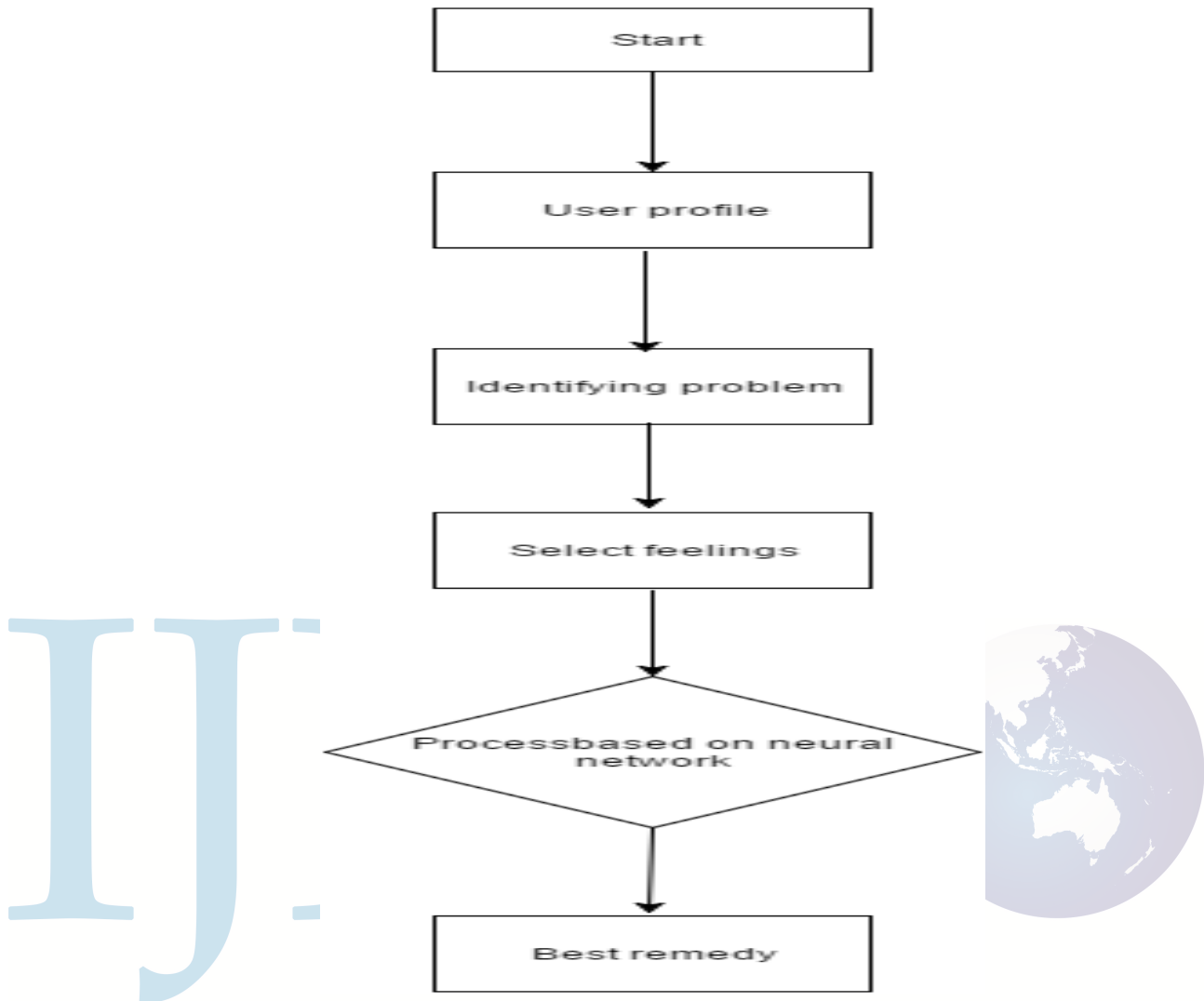


Figure 1

Conclusion

The paper proposes a solution to the day to day stress dealt by the individuals. It has also proposed a technique which will provide suggestions like a human counsellor. The combination of neural network and mobile based application is to get the best possible applications to users so that the users should get maximum benefits from it. The application will be portable to use so that a separate time and appointment related hassles could be resolved.

References

NEURAL NETWORKS by Christos Stergiou and Dimitrios Siganos

https://www.doc.ic.ac.uk/~nd/surprise_96/journal/vol1/cs11/article1.html

Er. Lavina , Er. Pankaj Dev Chadha CSE & Kurukshetra Kurukshetra, India, Survey on Crop

Prediction Using Back Propagation Neural *International Journal of Advanced Research in Computer Science and Software Engineering*, Vol 3(Issue 7), page 353

What is a Neural Network? written by Chris Stergiou,

https://www.doc.ic.ac.uk/~nd/surprise_96/journal/vol1/cs11/article1.html

Ben Hannigan, Deborah Edwards Philip Burnard. *Journal of Mental Health*, Vol4(Issue3)

<http://www.techtimes.com/articles/57571/20150605/12-mobile-apps-that-help-relieve-stress-and-anxiety.htm>

