

ACCUPUNCTURE CHATBOT

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1. Step by step instructions to use the interface:

We are going to build a chatbot using deep learning techniques. The chatbot will be trained on the dataset which contains categories (intents), pattern and responses. We will use a special Recurrent Neural Network (LSTM) to classify which category the user's message belongs to and then we will give a random response from the list of responses.

DESCRIPTION OF THE PROJECT:

- Import and load the data file: We import the necessary packages for our chatbot and initialize the variables we will use.
- Pre-process data: Pre-processing usually involves steps like stop words removal, tokenization, stemming, Lemmatization etc. Tokenizing is the process of breaking the whole text into small parts like words. Lemmatizing is the process of converting a word into its lemma form and then creating a pickle file to store the python objects which we will use while predicting.
- Create training and testing data: We will then create the training data in which we will provide the input and the output. Our input will be the pattern and output will be the class our input pattern belongs to.
- Build the model: Now we will build a deep neural network. We use the keras sequential API for this.

Predict the response: We will load the trained model and then use a graphical user interface that will predict the responses from the bot.

USER INTERFACE DESCRIPTION:

- ➔ Our chatbot has a user friendly interface. It is interactive as it asks the user about the particular problem or the disease, he/she is facing.
- ➔ When the user enters the disease, the bot traverses the database to check the corresponding acupuncture points.
- ➔ These points are given as the output to the user.

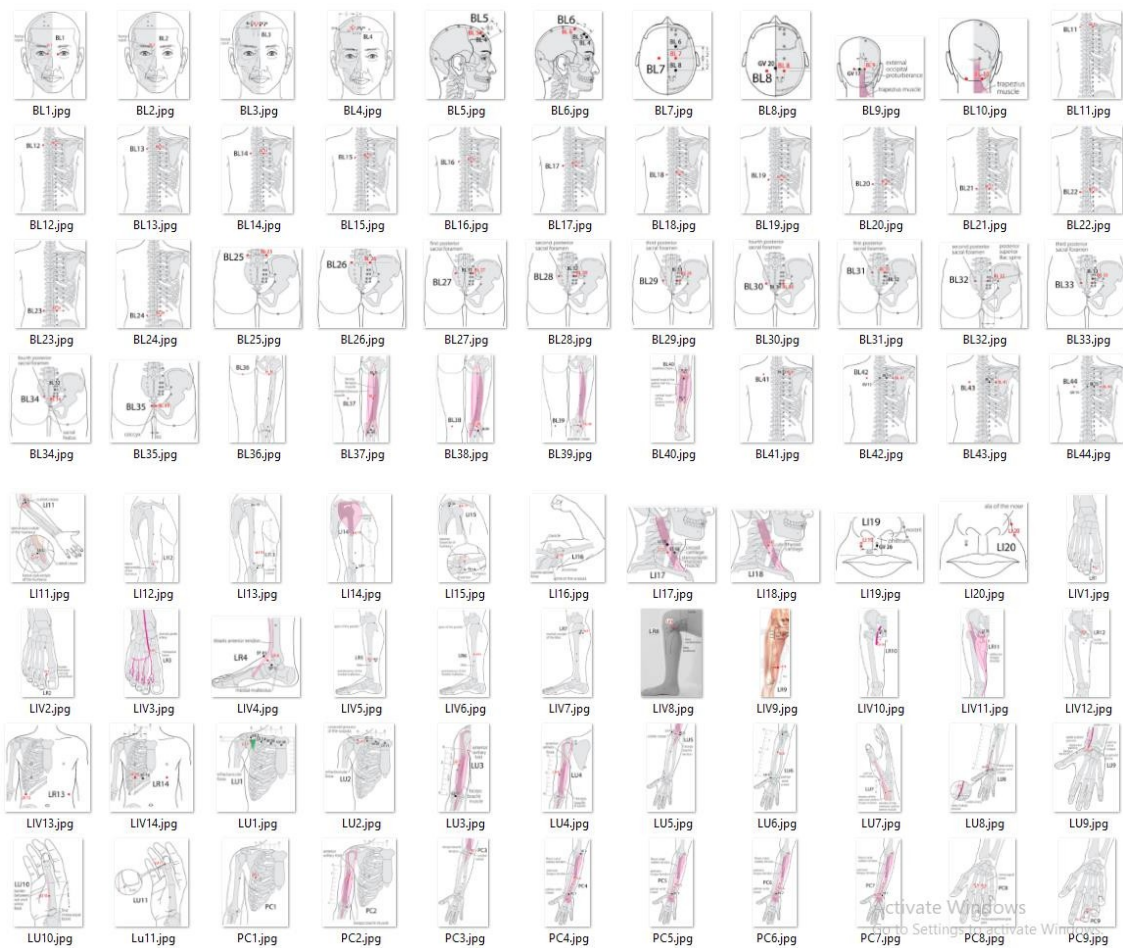
Requirements Analysis

About the Users:

- The target users in our project are the physiotherapists or the doctor who can take the input from the patients i.e., the symptoms they are feeling and then feed them into the chatbot which in turn passes them to the deep learning model and then can predict the problems the users is suffering from and then show the required acupuncture points.
- The patients can be anyone with a physical or psychological problem.
- The main user are the physiotherapist and doctors whom the patients are consulting regarding their problem.

About the Dataset:

- Image dataset



- Acupuncture points database:

ABDOMINAL PAIN: CV3, OR CV4, OR CV6, SP3, ST36. (வயிறு சார்ந்த பகுதியில் வலி)
ABDOMINAL PAIN PREGNANT LADY: CV12, PC6, BL17, BL20, ST36, LIV3,
ABNORMAL UTERINE BLEEDING: SP1, CV6, SP10, SP6 (சிறுநீரில் இரத்தம்)
ACID REFLUX DISEASE: LI18, CV12, SP17, ST11
ACNE: GV14, LI4, LI11, LU5, SP9, SP10, ST44
ACUTE BACK ACHE AND SCIATICA: BL28, BL36, BL54, GB30, BL40, GB34, LIV3
ACUTE GASTRITIS: CV13, PC 6, ST36, LI10, ST21, ST34, CV2. (இரைப்பை அழற்சி)
ACUTE INTESTINAL OBSTRUCTION: BL25, PC6, ST25, ST37, ST39, CV4, ST25, ST36, LI4.
ADRENAL POINTS: TW1, BL 22.(அட்ரீனல் நாளமில்லா சுரப்பி புள்ளிகள்)
AGING PROBLEMS: GV20, LI11, PC6, TW5, LI4, GB34, ST36, SP6, KI3, BL60.
ALCOHOLISM (DE ADDICTION): ST45, GV20, LIV3, ST8, ST25, BL10, BL62, HT7, CV10. (மதுப்பழக்கம் கோளாறு)
ALLERGIES: BL2, LI20, LU7, AND LI4. (அலர்ஜி)
AMENORRHEA: CV3, BL23, LI4, SP6 (தற்காலிகமாக பெண்களுக்கு தீட்டு வராமல் இருப்பது)
AMNESIA: HT9, LU7, GV20, LI11, (நினைவிழப்பு)
ANAEMIA: GB39, BL17, ST36, PC6. (இரத்தச்சோகை)
ANAEMIA: BL17 AND 15 (SPLEEN QI DEFICIENCY); BL17 AND 18, LIV8 (LIVER BLOOD DEFICIENCY)
ANALGESIC EFFECT POINTS: LI4, ST44. (வலி நீக்கும் புள்ளிகள்)
ANGINA PECTORIS: GV20, CV17, BL15, PC6, HT7, LU9, BL14, PC4, SP6 (கடுமையான நெஞ்சுவலி)
ANGINA PECTORIS: PC6, BL15, CV17, ST36, LI11, LI4, BL14.
ANXIETY DISORDERS: BL15, GB39, HT7, KI6, KI12, LIV1, LIV3, LIV5, P6, CV12, SP4, SP5, SP6
ANXIETY, DEPRESSION: SI3, PC 6, PC1, GV14, GV20, CV17. (மன அழுத்தம்)
APPENDICITIS: GV20, ST25, ST29, CV12, ST36, LI4, GV14, LI1, SP6. (குடல்வால் அழற்சி)
ARTHRITIS OF KNEE: GB33, LIV8, GB34, SP9 (முழங்கால் மூட்டழற்சி)
FAINTING: GV26, SI8, KI1. (மயக்கம்)
FEAR WITH HEART PAIN: HT9, HT7, GB34, PC 6, LI4, LI11.
FEVER: GV14, LI11, LI4. (காய்ச்சல்)
FLU(INFLUENZA): GB20, LI4, LI20, LU7, LI11, DU20, DU14
FOOD POISONING: ST36, ST25, CV4, CV5, CV6, P6, SP6
FOOT DROP: ST36, GB34. (கால் தோய்வு)
FORBIDDEN ACUPUNCTURE POINTS DURING PREGNANCY: GB21, SP6, LI4, BL31, BL32, BL60, BL67.
FREQUENT URINATION, BED WETTING: CV3, CV4, KI3, BL62, SP6, ST36, BL67. (அடிக்கடி சிறுநீர் போவது, தூக்கத்தில்)
FRONTAL HEADACHE: ST8, BL2, LI4, LI11.
FROZEN SHOULDER: LI15, TW14, LI16, TW5, SI9, SI10, SI14, SI11, LI4. GB34.
GALL BLADDER DISEASES: BL19, GB24. (பித்தப்பை நோய்கள்)
GASTRIC OR DUODENAL ULCER: GB29, BL17, BL18, BL20, ST25, CV12, LI4, LI11.
GASTRITIS: PC6, ST34, CV12, LI4, ST25, LI11.
GENERAL TONIFICATION: ST36, CV4, CV6, LU9. (உடல் தெம்பு பெற)
GENERAL WEAKNESS AND DEBILITY: SP6, BL23, CV4, CV6, LI11.
GENITAL PROBLEMS: SP10, SP8, SP6, ST36, ST28. (பிறப்புறுப்பில் நோய்கள்)
GLAUCOMA: LIV2, GB20, LI4, GB22, LI11.
GLAUCOMA: BL63, LIV2, ST36, GB20, BL2, GB1, LI4, LIV3, KI3, SP6, BL18.
GOUT: SP2, SP3, KI3, KI7, LI11, LI4, ST44
GOUTY ARTHRITIS: BL23, KI7, LIV2, SP3, SP4, SP6, LI4.
GUM DISEASE: LI4, LI11, ST5, ST6, ST42
HAEMORRHOIDS: LIV11 WITH SP10, LIV2, BL17; PLUS GV1 AND 20, BL57 AND 58, GV20 (BLOOD STASIS)
HAIR FALL: GB20, BL13, LI4, KI3, LIV3, GV20, GB8, GB41.

DATA COLLECTION METHODS USED:

- ➔ By crawling the website(Yin Yang House)
- ➔ Getting online acupuncture datasets
- ➔ Surveys

SURVEY:

A survey was done where people gave their reviews about how effective the acubot is:

Patient name	No of sessions	Side effects	Overall experience	Successful or not?
Ravi kumar	4	None	Good	Yes
Deepika S	2	Pain in back	Normal	The main disease was cured and pain remained for only a few days
Harika V	3	None	Good	Yes
Sai Samrat	5	None	Good	Yes
Nitya P	3	Joint pain	Normal	Requires one more sitting for complete curing of the disease

TOOLS REQUIRED:

- **Python:**

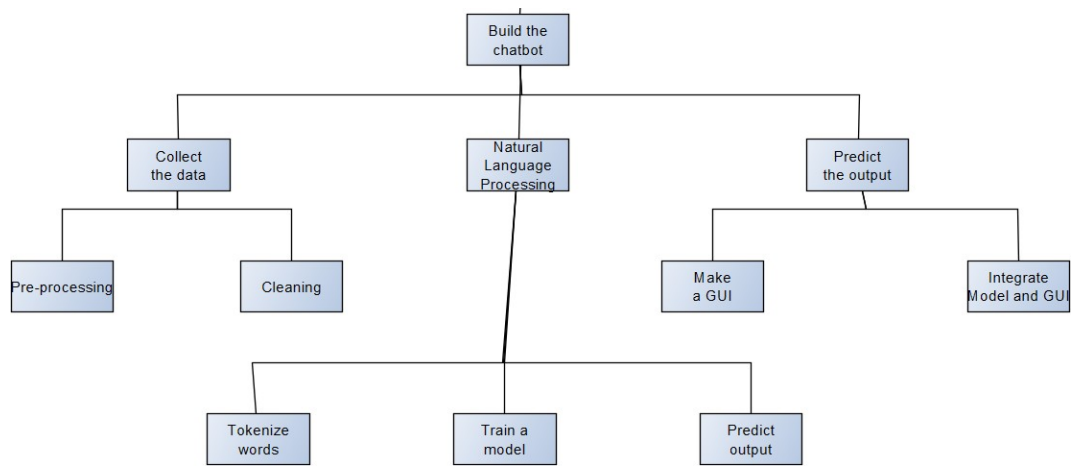
Python is an interpreted, high-level, general-purpose programming language. Created by Guido van Rossum and first released in 1991, Python's design philosophy emphasizes code readability with its notable use of significant whitespace. Its language constructs and object-oriented approach aim to help programmers write clear, logical code for small and large-scale projects.

- **TensorFlow:**

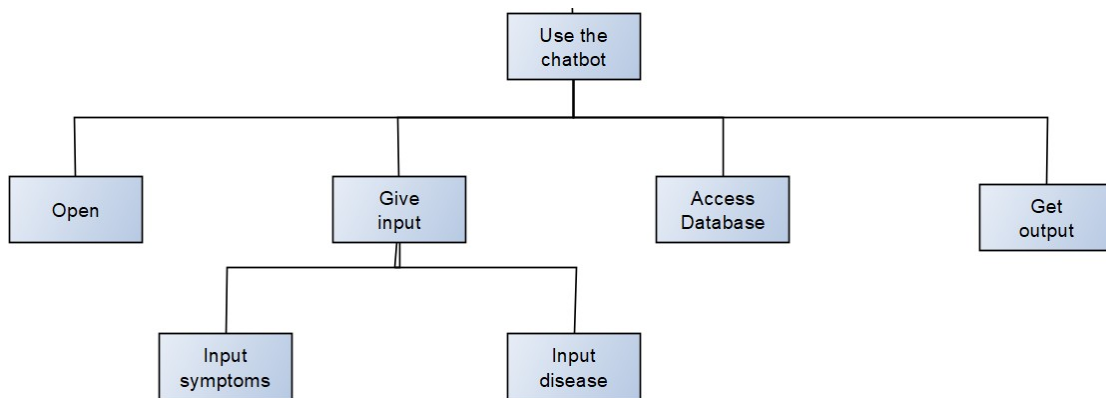
TensorFlow is a free and open-source software library for dataflow and differentiable programming across a range of tasks. It is a symbolic math library, and is also used for machine learning applications such as neural networks.[4] It is used for both research and production at Google.

Hierarchical Task Analysis

1. Building the chatbot (HTA)



2. Using the chatbot (HTA)



Storyboarding

