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Article

Medical Healthcare Chatbot

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I N F O

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A B S T R A C T

Regularly Users don't know pretty much all the treatment or manifestations with respect to the specific infection. For little issue client need to go by and by to the medical clinic for registration which is additional tedious. Likewise dealing with the telephonic requires the grumblings is very rushed. Such an issue can be unraveled by utilizing clinical Chatbot by giving legitimate direction in regards to solid living. This paper plans to introduce a structure for a clinical Chatbot that gives analysis and cures dependent on the side effects gave to the framework.

The organisation will be able to amount the momentousness of the diagnosis and if wanted, it will ascribe the user to a doctor obtainable connected.

Keywords: Medical Chatbot, Word Order Similarity between Sentences

Introduction

The purpose of this project to collect the patients' medical history of records and filter it appropriately by applying data preprocessing techniques. Once the data comes into the structured shape it can then be fed into the relational database structure of MS Excel file.

There are few Medical Chatbots that already exist, but they do not provide users with prescription to any ailment yet interface them with a Medical QA Forum and show them comparable inquiries to their side effects that specialists may have recently replied. The framework was contrasted and Health Tap which is a well-known Facebook Messenger Chatbot. Our thought process is to show that the proposed clinical Chatbot could be a superior option in contrast to numerous previously existing Chatbots in the space of medication. The framework centers on the messages that the client gives while starting the discussion.

The thought behind this is to recognize the primer indications and the issues that the client might be encountering.

After the Chatbot has gathered enough watchwords from the underlying messages, it currently begins driving the discussion by posing inquiries to the client and attempting to waitlist hardly any infections that the client might be enduring.

Data Collection and Symptoms

Dataset

After collecting results from the user three datasets are obtained:

Dimensionality Reduction Dataset

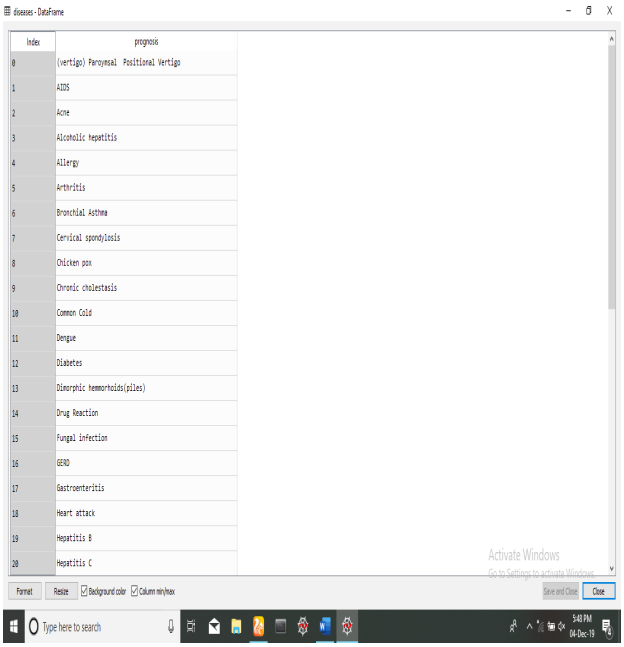
Size (rows = 41 x Columns = 132)

Rows contain the name of disease while the columns contain the indications regarding that disease. In the dataset "1" denotes that the disease contains the serially symptom while "0" denotes that the symptom is not present in that disease.

Doctor's Dataset

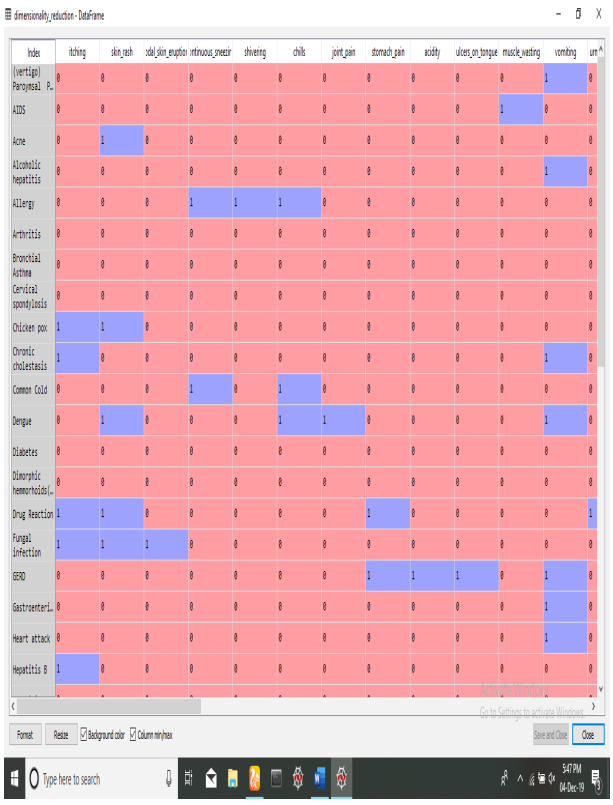
Size (rows=41 * columns =3)

Each row contains names of doctor associated with 41 diseases while there is an additional column which represents the link of the profile of the respective doctor.



Index	prognosis
0	(vertigo) Paroymsal Positional Vertigo
1	AIDS
2	Acne
3	Alcoholic hepatitis
4	Allergy
5	Arthritis
6	Bronchial Asthma
7	Cervical spondylosis
8	Chicken pox
9	Chronic cholestasis
10	Common Cold
11	Dengue
12	Diabetes
13	Dimorphic hemmorhoids(piles)
14	Drug Reaction
15	Fungal infection
16	GERD
17	Gastroenteritis
18	Heart attack
19	Hepatitis B
20	Hepatitis C

Figure 1.Dimensionality Reduction Dataset

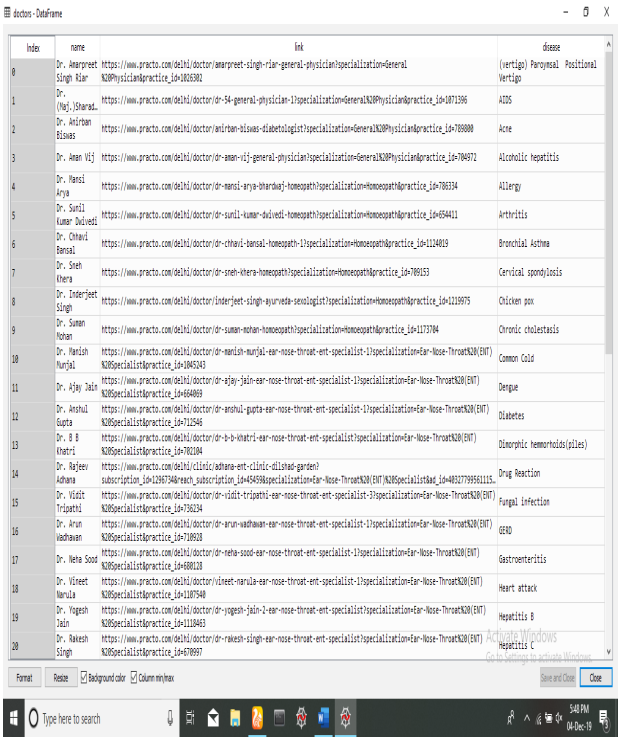


Index	itching	skin_rash	nodal_skin_eruptions	continuous_sneezing	shivering	chills	joint_pain	stomach_pain	acidity	ulcers_on_tongue	muscle_wasting	vomiting	...
(vertigo) Paroymsal P..	0	0	0	0	0	0	0	0	0	0	0	1	0
AIDS	0	0	0	0	0	0	0	0	0	0	1	0	0
Acne	0	1	0	0	0	0	0	0	0	0	0	0	0
Alcoholic hepatitis	0	0	0	0	0	0	0	0	0	0	0	1	0
Allergy	0	0	0	1	1	1	0	0	0	0	0	0	0
Arthritis	0	0	0	0	0	0	0	0	0	0	0	0	0
Bronchial Asthma	0	0	0	0	0	0	0	0	0	0	0	0	0
Cervical spondylosis	0	0	0	0	0	0	0	0	0	0	0	0	0
Chicken pox	1	1	0	0	0	0	0	0	0	0	0	0	0
Chronic cholestasis	1	0	0	0	0	0	0	0	0	0	0	1	0
Common Cold	0	0	0	1	0	1	0	0	0	0	0	0	0
Dengue	0	1	0	0	0	1	1	0	0	0	0	1	0
Diabetes	0	0	0	0	0	0	0	0	0	0	0	0	0
Dimorphic hemmorhoids(...	0	0	0	0	0	0	0	0	0	0	0	0	0
Drug Reaction	1	1	0	0	0	0	0	1	0	0	0	0	1
Fungal infection	1	1	1	0	0	0	0	0	0	0	0	0	0
GERD	0	0	0	0	0	0	0	1	1	1	0	1	0
Gastroenteri...	0	0	0	0	0	0	0	0	0	0	0	1	0
Heart attack	0	0	0	0	0	0	0	0	0	0	0	1	0
Hepatitis B	1	0	0	0	0	0	0	0	0	0	0	0	0

Figure 2.Disease Dataset

Data Preprocessing

Data preprocessing is a data mining method that includes changing raw data into an comprehensible format. Data is said to be unclean if it is inappropriate attribute, attribute values, encompass noise or outliers and duplicate or wrong data. Attendance of any of these will degrade excellence of the consequences.



Index	name	link	disease
0	Dr. Amarpreet Singh Kler	https://www.practo.com/delhi/doctor/amarpreet-singh-kler-general-physician?specialization=General%20Physician&practice_id=1026302	(vertigo) Paroymsal Positional Vertigo
1	Dr. (Vaj.)Sharad...	https://www.practo.com/delhi/doctor/dr-54-general-physician-13?specialization=General%20Physician&practice_id=1071396	AIDS
2	Dr. Anirban Biswas	https://www.practo.com/delhi/doctor/anirban-biswas-diabetologist?specialization=General%20Physician&practice_id=789080	Acne
3	Dr. Aman Vij	https://www.practo.com/delhi/doctor/dr-aman-vij-general-physician?specialization=General%20Physician&practice_id=784972	Alcoholic hepatitis
4	Dr. Mansi Arya	https://www.practo.com/delhi/doctor/dr-mansi-arya-bhardwaj-homeopath?specialization=Homoeopath&practice_id=786334	Allergy
5	Dr. Sunil Kumar Dwivedi	https://www.practo.com/delhi/doctor/dr-sunil-kumar-dwivedi-homeopath?specialization=Homoeopath&practice_id=654411	Arthritis
6	Dr. Chhavi Bansal	https://www.practo.com/delhi/doctor/dr-chhavi-bansal-homeopath-13?specialization=Homoeopath&practice_id=1124019	Bronchial Asthma
7	Dr. Sneh Khera	https://www.practo.com/delhi/doctor/dr-sneh-khera-homeopath?specialization=Homoeopath&practice_id=786153	Cervical spondylosis
8	Dr. Inderjeet Singh	https://www.practo.com/delhi/doctor/inderjeet-singh-ayurveda-sexologist?specialization=Homoeopath&practice_id=1219975	Chicken pox
9	Dr. Suman Mohan	https://www.practo.com/delhi/doctor/dr-suman-mohan-homeopath?specialization=Homoeopath&practice_id=1173704	Chronic cholestasis
10	Dr. Manish Munjal	https://www.practo.com/delhi/doctor/dr-manish-munjal-ear-nose-throat-ent-specialist-13?specialization=Ear-Nose-Throat%20(ENT)%20Specialist&practice_id=1045243	Common Cold
11	Dr. Ajay Jain	https://www.practo.com/delhi/doctor/dr-ajay-jain-ear-nose-throat-ent-specialist-13?specialization=Ear-Nose-Throat%20(ENT)%20Specialist&practice_id=664089	Dengue
12	Dr. Anshul Gupta	https://www.practo.com/delhi/doctor/dr-anshul-gupta-ear-nose-throat-ent-specialist-13?specialization=Ear-Nose-Throat%20(ENT)%20Specialist&practice_id=712546	Diabetes
13	Dr. B B Khatri	https://www.practo.com/delhi/doctor/dr-b-b-khatri-ear-nose-throat-ent-specialist?specialization=Ear-Nose-Throat%20(ENT)%20Specialist&practice_id=702104	Dimorphic hemmorhoids(piles)
14	Dr. Rafeev Adhana	https://www.practo.com/delhi/clinic/adhana-ent-clinic-dilshad-garden?subscription_id=1296734&each_subscription_id=454598&specialization=Ear-Nose-Throat%20(ENT)%20Specialist&ad_id=4852779956115...	Drug Reaction
15	Dr. Vidit Tripathi	https://www.practo.com/delhi/doctor/dr-vidit-tripathi-ear-nose-throat-ent-specialist-13?specialization=Ear-Nose-Throat%20(ENT)%20Specialist&practice_id=736234	Fungal infection
16	Dr. Arun Wadhawan	https://www.practo.com/delhi/doctor/dr-arun-wadhawan-ear-nose-throat-ent-specialist-13?specialization=Ear-Nose-Throat%20(ENT)%20Specialist&practice_id=710928	GERD
17	Dr. Neha Sood	https://www.practo.com/delhi/doctor/dr-neha-sood-ear-nose-throat-ent-specialist-13?specialization=Ear-Nose-Throat%20(ENT)%20Specialist&practice_id=688128	Gastroenteritis
18	Dr. Vineet Narula	https://www.practo.com/delhi/doctor/vineet-narula-ear-nose-throat-ent-specialist-13?specialization=Ear-Nose-Throat%20(ENT)%20Specialist&practice_id=1107540	Heart attack
19	Dr. Yogesh Jain	https://www.practo.com/delhi/doctor/dr-yogesh-jain-2-ear-nose-throat-ent-specialist?specialization=Ear-Nose-Throat%20(ENT)%20Specialist&practice_id=1118463	Hepatitis B
20	Dr. Rakesh Singh	https://www.practo.com/delhi/doctor/dr-rakesh-singh-ear-nose-throat-ent-specialist?specialization=Ear-Nose-Throat%20(ENT)%20Specialist&practice_id=670997	Hepatitis C

Figure 3.Doctor's Dataset

Data Discovery and Visualization

Data discovery is the procedure of breaking multifaceted data groups into info that users can appreciate and accomplish. Data visualization incomes this perception to new levels by presenting a wide array of tools and methods to make graphic pictures that can directly reveal then problematic to observe patterns or relations in the underlying data.

Algortihm used Decision Tree Algorithm

Decision Trees are a class of very powerful Machine Learning model chain of attaining high accuracy in numerous tasks while existence extremely interpretable. What makes decision trees singular in the realm of ML models is really their clearness of info representation. The "knowledge" learned by a decision tree through training is straight expressed into a ranked structure. This structure embraces and shows the information in this manner a way that it can effortlessly be unwritten, smooth by non-experts.

Fine Tuning

Fine tuning is a procedure to revenue a network model that has previously remained skilled for a assumed commission, and brand it achieve a additional alike task.

Deployment

Deployment of AI models, or basically, placing models into creation, implies making your models accessible to your different business frameworks. By conveying models, different frameworks can send information to them and

get their expectations, which are thusly populated go into the organization frameworks.

Result and Conclusion

The model is efficiently able to determine the disease after collecting the symptoms from the user. It is found that the test accuracy is 68.01% but practically it achieves much better than its testing accuracy.

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