



# Disease Detection<sup>+</sup> And Identification Based On Symptoms



# About Our Project

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**This project uses IR methods to identify diseases by their symptoms. Even someone with little medical background may easily operate the system, which can be helpful for early illness diagnosis and detection. They will gain a basic understanding of the disease's severity from this.**



# COMPONENTS

## Indexing

It reduces the documents to the informative terms in them

## Searching

We calculate the tf and idf values and similarity and return the top relevant document.

## Query expansion

we find all of the synonyms for each user symptom and append to input string

## Refine search

User selects the co-occurring symptoms that he notice and based on them search results are filtered.

## Relevance feedback

Feedback is collected from the user based on above retrieved results and the results are again filtered to obtain final results

## Assessment Components

We calculated the Precision , Recall, MAP and plot P-R Curve.

# Working Model

## Disease detection System

### User Information Form

Enter your name:

Priya

Enter your email:

priya@gmail.com

Enter symptoms you experienced separated by comma (,):

Fever,cold,cough

- After query expansion using synonyms:

```
▼ [  
    0 : "febrility febricity pyrexia fever feverishness"  
    1 :  
        "low temperature stale dusty frigid frigidity cold insensate inhuman coldness  
        frigidness cold-blooded moth-eaten common cold"  
    2 : "cough coughing"  
]  
▶
```

- Top matching symptoms based on the user query:

0 : fever

1 : coughing

Please select the relevant symptoms. Enter indices (separated-space):

0 1

- Common co-occurring symptoms are listed below:

0 : headache

1 : testicular pain

2 : vomiting

3 : barky cough

4 : sore throat

Do you have **have** of these symptoms? If Yes, enter the indices (space-separated), 'no' to stop, '-1' to skip:

- Final list of Symptoms used for prediction are :

fever

coughing

headache

sore throat

- Top 5 diseases predicted based on TF\_IDF Matching :

0. Disease : Influenza Score : 10.97

1. Disease : Ebola Score : 6.5

2. Disease : Scarlet fever Score : 6.5

3. Disease : Common cold Score : 4.55

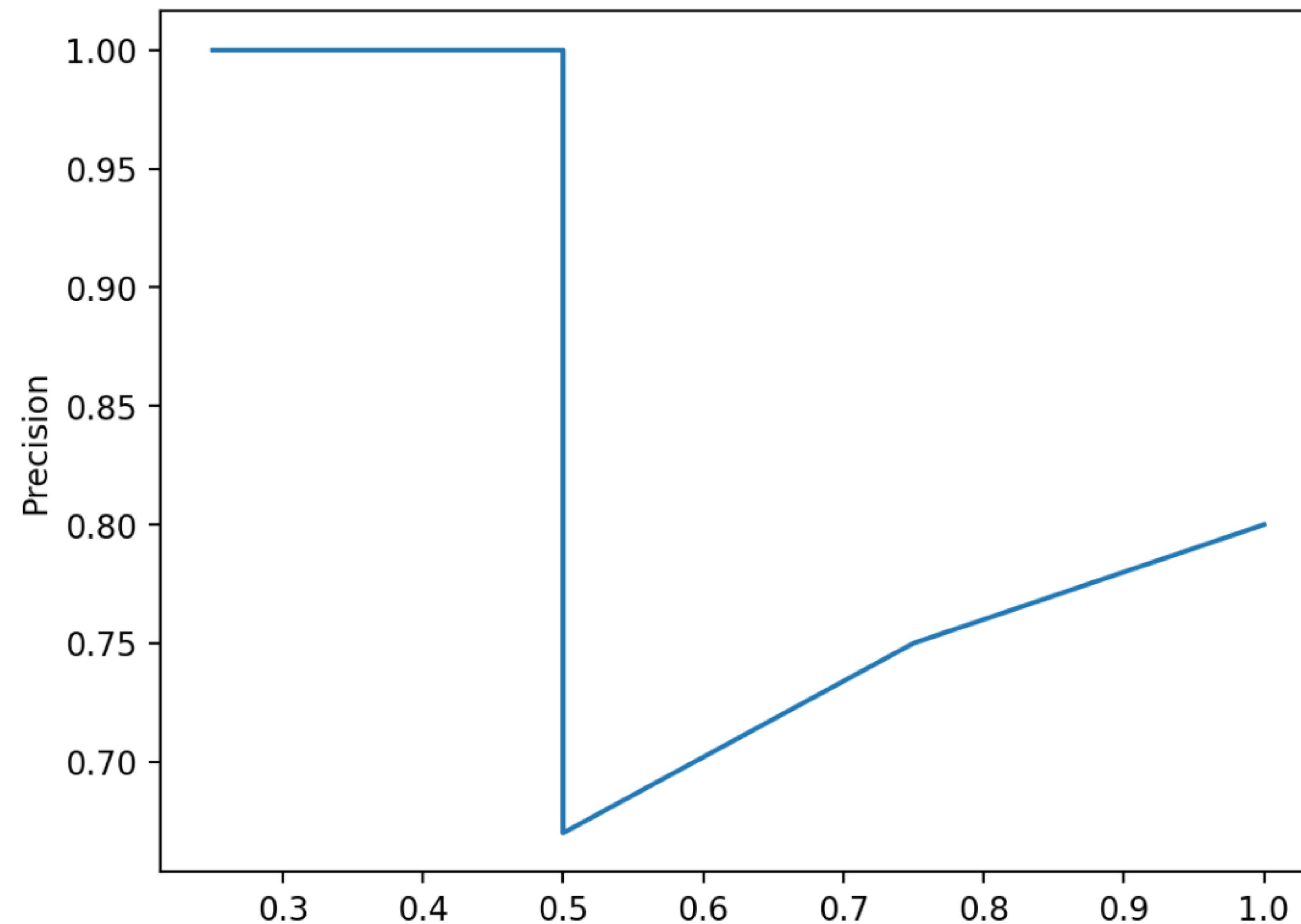
- Top 5 disease based on Cosine Similarity Matching :
0. Disease : Brucellosis Score : 0.74
  1. Disease : Influenza Score : 0.66
  2. Disease : Diphtheria Score : 0.43
  3. Disease : Rocky Mountain spotted fever Score : 0.39
  4. Disease : Strep throat Score : 0.36

Please select the relevant documents. Enter indices (separated-space):

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0 1 3 4

## PRECISION-RECALL CURVE



Hey Priya! Here are our results:

- Top 5 diseases after Relevance Feedback :
0. Disease [35] : Brucellosis Score : 1.14
  1. Disease [119] : Influenza Score : 1.06
  2. Disease [207] : Rocky Mountain spotted fever Score : 0.79
  3. Disease [230] : Strep throat Score : 0.76
  4. Disease [76] : Diphtheria Score : 0.43

Done! Prevention is better than cure



# Team Details

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- 1.Index Component**
- 2.Search Component**
- 3.Query Expansion**



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- 1.Refine Search**
- 2.Relevance Feedback**
- 3.Assessment Components**

