LUNG DESEASE PREDICTION

INTRODUCTION

Due to urbanization the air pollution rate increasing day by day, WHO estimates that over 4 million premature deaths occur annually from household air pollution-related diseases which also include different heart deseases.in order to decrease the mortality rate it is very necessary that the disease should be diagnosed early. So this system helps the experts to diagnose heart diseases early and accurately.

OBJECTIVE

The goal of this project is to build a model that can predict the occurrence of lung disease earlier. With the technology machine and computer power, the earlier identification of diseases, particularly lung disease, we can be helped to detect earlier and more accurately, which can save many people as well as reduce the pressure on the system. The health system has not developed in time with the development of the population**.**

The dataset used here is CapsNetBasic_log.csv, log_bCNN_rgb.csv ect

DATASET

- File contents: images_00x.zip: 12 files with 112,120 total images with size 1024 x 1024 README_ChestXray.pdf: Original README file BBox_list_2017.csv: Bounding box coordinates. Note: Start at x,y, extend horizontally w pixels, and vertically h pixels Data_entry_2017.csv: Class labels and patient data for the entire dataset
- Class descriptions: there are 15 classes (14 diseases, and one for "No findings"). Images can be classified as "No findings" or one or more disease classes: Atelectasis, Consolidation, Infiltration, Pneumothorax, Edema, Emphysema, Fibrosis, Effusion, Pneumonia, Pleural_thickening, Cardiomegaly, Nodule Mass, Hernia.

INSTALLATION

Requirements

1.Server side:

- Operating System: windows10
- Processor: intel i3

2.Client side:

- Operating System: Windows 10,MAC or UNIX.
- Processor: Pentium or 2.ghz higher.

3.Software components:

- **Database: Sql server.**

- **Jupyter Notebook with python3.**

```
$ sudo apt-get update
$ sudo apt-get install python3-pip python3-dev
$ pip3 install --upgrade pip
$ pip3 install jupyter
```

- **Tensorflow for GPU**

```
$ pip3 install tensorflow     # Python 3.n; CPU support (no
GPU support)
$ pip3 install tensorflow-gpu # Python 3.n; GPU support
```

- **Keras for GPU**

```
$ pip3 install keras
```

- **Others**

- numpy
- pandas
- seaborn
- matplotlib
- openc
- glob
- tqdm
- sklearn
- pickle

4. Hardware components:

- Processor-i3
- Hard Disk-5GB
- Memory -1GB RAM

PRODUCT FEATURES

The users using this product are:

- Doctors.
- Patients.

Modules

- Admin module: Which add training data, add doctor's details, check feedbacks, View users details and view training data.
- User module: Which consist of registration, enter_details, login, check results ,give feedback and view doctors functions**.**

This system will provide the result as whether the entered dataset have disease or not.

FUNCTIONS USED:

- length(): Which is used to compute the length of the vectors. Used to compute a tensor that has the same shape with y_true in margin _loss .Using this layer as model's can directly predict labels by using y_pred.
- mask():Mask a Tensor with shape=[None, num_capsule, dim_vector]
- capsuleleyar():Just expand the output of the neuron from scalar to vector.

SUPPORT

If you are having issues,please let us know.

we have mailing list located at: support@google-project.com

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