The Deep Skin disease(dermatosis) diagnoses system

# Project plan:

## Stage1

### Objective: Diagnose the eczema

1. Collect the data
2. Built up the dataset using machine learning
3. Build up the model based on the pre-trained densenet model (imagenet), fine tune it to make a binary classification

# The characteristic of dermatosis

# The current diagnosis methods

1. 皮肤镜

2. 临床观察

3. 化验

# Data we have and the methodology of collecting the data

Tianchi

UCI

Kaggle

# Related works

Tianchi

CNN

Mamogram

MICCAI

An article about the AI based dermatosis diagnoses system

<http://derm.dxy.cn/article/539648>

<http://www.sohu.com/a/141803141_114731>

This system is built by three party

One hospital: Hunan Xiangya Second Hospital, one AI startup Company: Dacheng Technology Ltd. And an Internet Company (Doctor social platform) 丁香园

It is based on the data collected by Xiangya Hospital, including three kinds of training data

1. The Dermatoscope images
2. Normal picture
3. Normalized pictures

And the main objective of current stage is the lupus erythematosus (红斑狼疮)

Different from our system, it is made to assist the diagnosis of doctors. More specific, to distinguish the different sub types of erythematosus. Whereas our system is targeted to the end user and it is made for a screening process.

2 mature direction:

1. lupus erythematosus
2. skin cancer

https://wenku.baidu.com/view/b22202f75ef7ba0d4a733bcf.html

# References:

[1] <http://archive.ics.uci.edu/ml/datasets/dermatology>

[2] <https://www.amazon.com/Skin-Disease-Diagnosis-Treatment-4e/dp/0323442226/ref=sr_1_3?ie=UTF8&qid=1516860408&sr=8-3&keywords=skin+disease+diagnosis+and+treatment>

[3] https://en.wikipedia.org/wiki/Cutaneous\_condition

# Resources demand:

1. The book about the skin disease diagnoses

Skin Disease: Diagnosis and Treatment, 4e 4th Edition USD $ 77.51

1. More disk space on GPU Cluster(200GB) to support the data collection