# Skin Disease Prediction Using Deep Neural Network

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## Problem Description

Nowadays, due to lack of medical doctors (especially the general practitioners), they are expected to diagnose on the diseases that they have little experience on. This causes many diseases to be misdiagnosed which inherently leads to malpractices.

As a result it causes excessive intensity in hospitals which run under limited resources. This situation significantly reduces the quality of health care provided.

## Introduction

Early diagnosis plays a very important role in the treatment process. The late diagnosis of deadly diseases such as cancer can completely invalidate the treatment. The important factor is to shorten the diagnosis process significantly. Thus, the possibility of treating many diseases as benign/melignant with early diagnosis will increase considerably.

This project aims to create an information repository from the past diagnoses, then support all patients with skin diseases in the decision-making stage with the help of knowledge of diseases that are difficult to diagnose.

In addition, another benefit of this continuously growing pool of information is; the decisions to be made are more up-to-date

## Used

spring by Pivotal

TensorFlow

Keras

SPYDER

ANACONDA

## References

[1] https://searchenterpriseai.techtarget.com/definition/convolutional-neural-network

[2] https://computersciencewiki.org/index.php/Max-pooling_/_Pooling

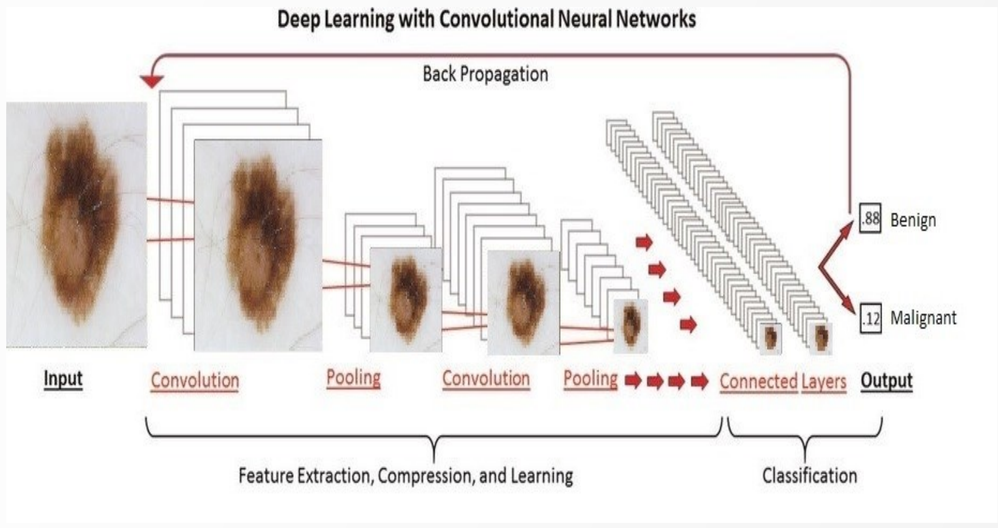
[3]http://www.wildml.com/2015/11/understanding-convolutional-neural-networks-for-nlp/

[4] https://figshare.com/articles/

[5] http://wikiyours.com/makale/cilt-kanseri

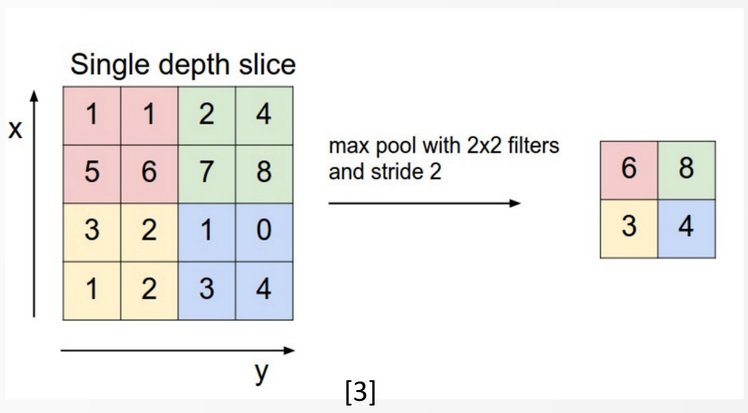
## Convolutional Neural Network

A convolutional neural network (CNN) is a type of artificial neural network used in image recognition and processing that is specifically designed to process pixel data.[1]

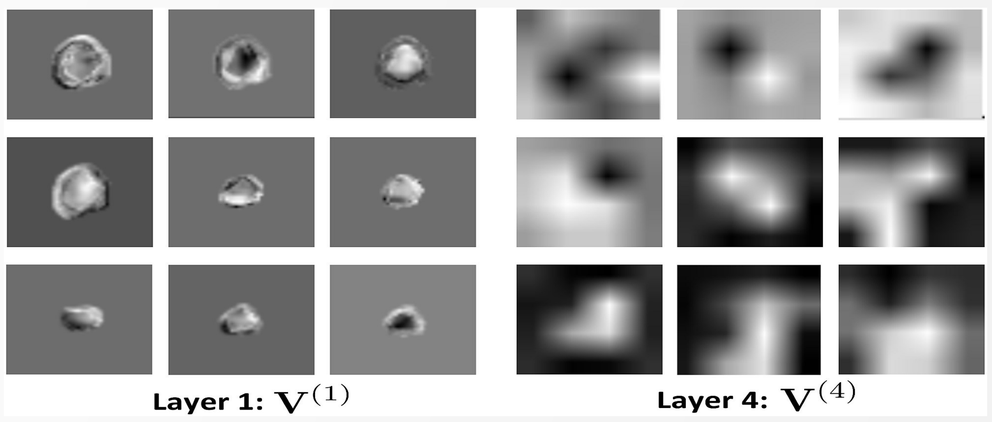



## What is Pooling ?

Pooling is a **sample-based discretization process**. The objective is to down sample an input representation (image, hidden-layer output matrix, etc.), reducing its dimensionality and allowing for assumptions to be made about features contained in the sub-regions binned. [2]

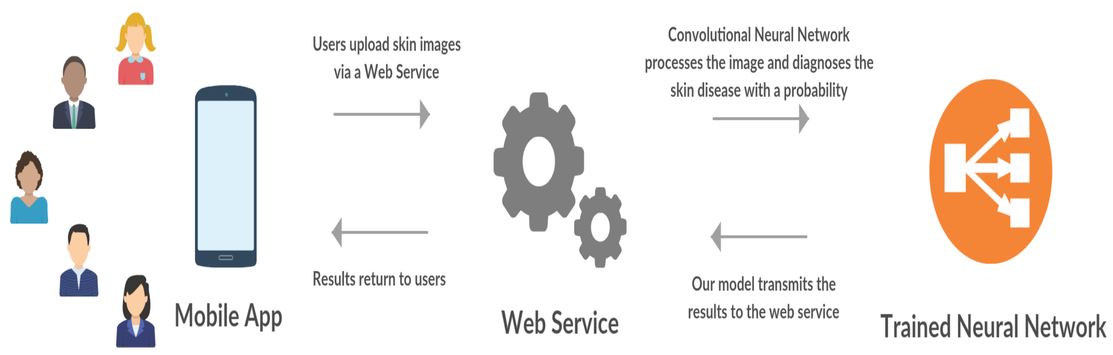



[3]

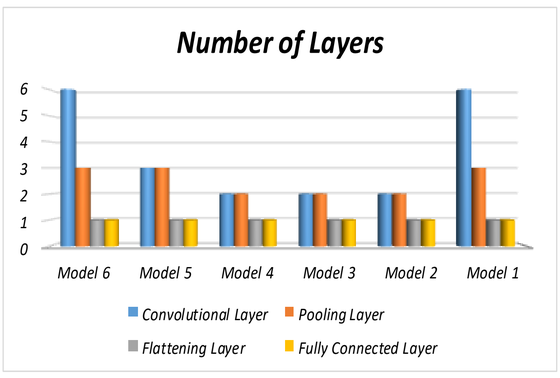



[4]

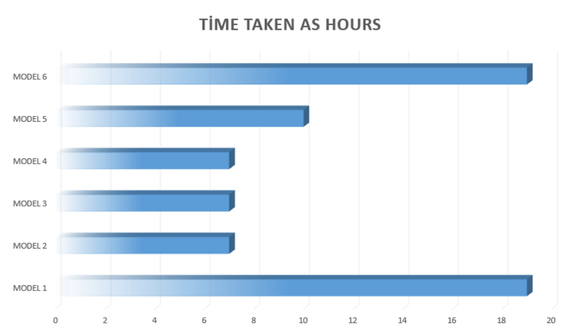
## Use Case Diagram



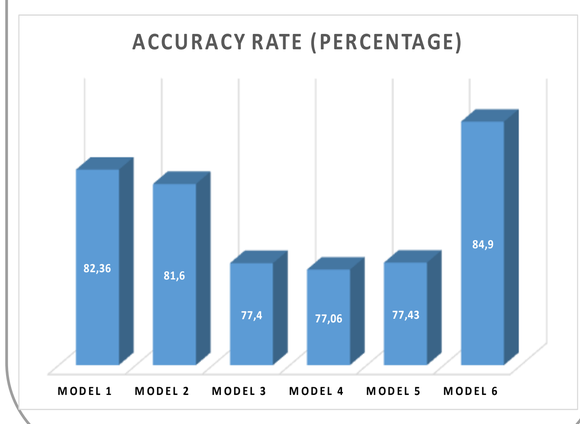

## Our Models




## Training Durations




## Test Results




## Conclusion

The reason for us to make this project is to help our doctors to make decisions, to know that we will touch every life that will be saved, and to fulfill our duty as software developers.

For this purpose, we've created a RESTFUL web server for any user to use it easily. They just send the disease image to webserver and it returns result as JSON.

It also provides us to enlarge disease dataset which let data scientists to create better neural networks with higher accuracy rate.

## Contacts

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