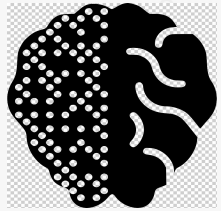
Community of doctors

CheckMyDiagnosis



CheckMyDiagnosis

AI in healthcare

Artificial intelligence in healthcare

AI is the ability of computer algorithms to approximate conclusions based solely on input data

What **distinguishes** AI technology **from traditional technologies** in health care is the ability to gather data, process it and **give a well-defined output to the end-user**.

AI in healthcare

AI has led to significant improvements in areas of healthcare such as medical imaging, **automated clinical decision-making** and diagnosis

We are not alone

There are a **lot of startups** trying to use machine learning to disrupt the existing medical system.
However machine learning by itself cannot solve medical issues, but it can be used to improve various aspects of diagnostics of many diseases as well as medical research.
It has been shown that machine learning models can be successful in diagnosing diseases, even **achieving higher accuracy than doctors**.

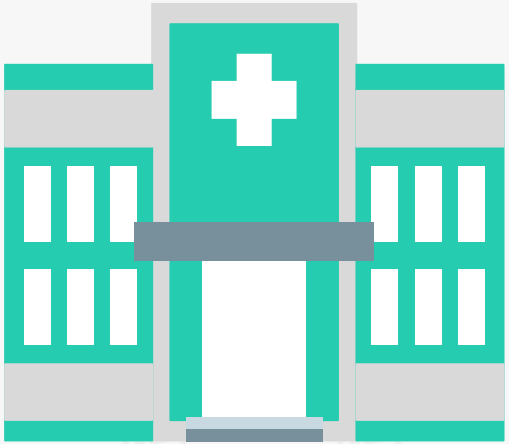
If only we could

If only we could use the opinions **of many doctors at once** and use them to **improve AI**

If only **doctors around the world** could consult each other in making a diagnosis

Who will use better medical AI

Clinics



Doctors

In making a decision

Mobile applications

People want to get “fast” diagnosis

The main idea

Clinics want to **automat clinical decision-making and diagnosis system and decrease medical costs.**

To do this, they make automation and AI.

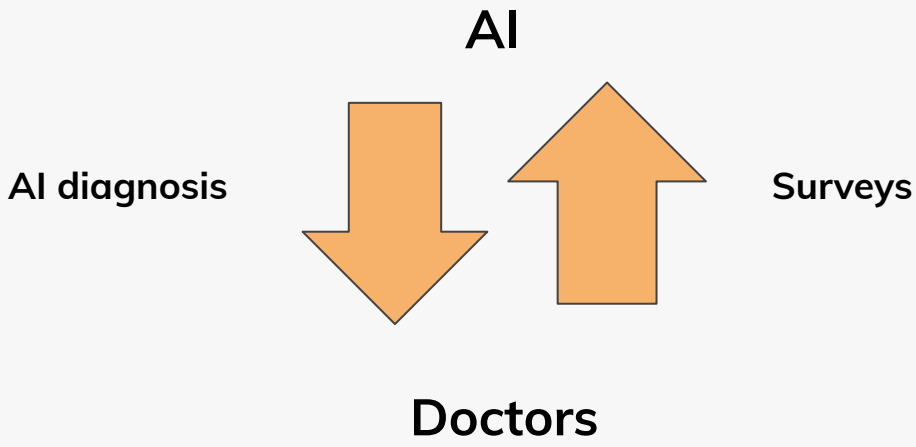
The AI uses analysis data and the opinion of 1-2 doctors.

We want to add the opportunity for other doctors to participate in the diagnosis process, thereby **training the existing AI model**.

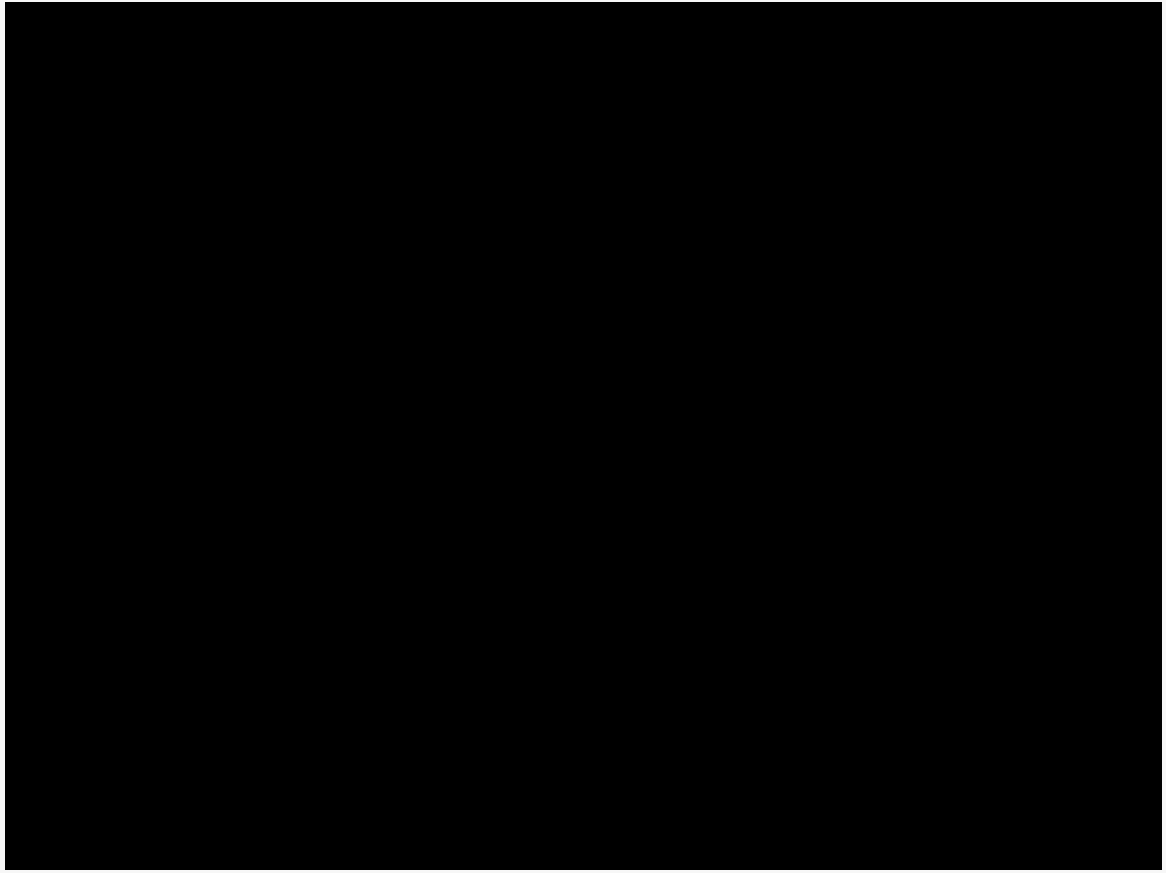
In return, **doctors will be able to** get an initial diagnosis from the AI and **consult** with other doctors.

Solution

- Give to doctors a powerful tool where AI is going to provide diagnosis about potential skin cancer image
- Increase the model accuracy with human interaction
- Exchange knowledge with doctors



Demonstration



People think that the doctors are the smartest persons but we can make them even smarter !

Model

Base model

Input: images

Architecture: we used transfer learning with Mobilenet v2 neural network architecture combined with Dropout layer + Our classification layer

Training: we trained the model with ~7500 basic images and ~35 000 images generated by tensorflow image generator

Output: probabilities for each class of a mole for the input image

Accuracy: combined accuracy for 3 malignant classes ~97%; class accuracy ~67%

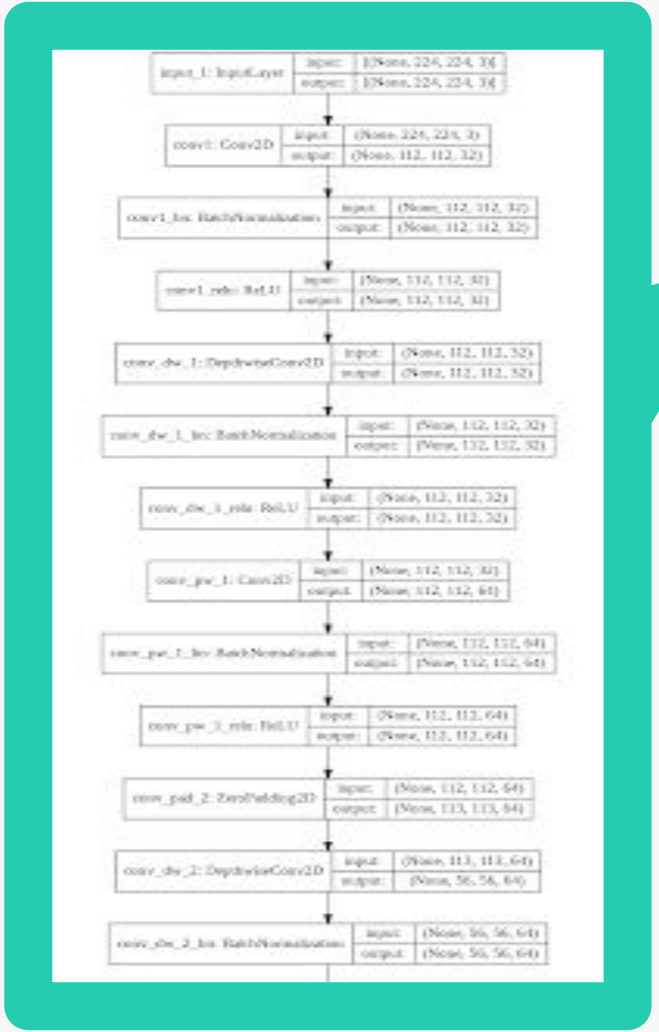
Second model

Input: survey data + class weights

Architecture: sklearn random forest classifier

Training: we train the model with all the data collected from the doctors

Output: more accurate probabilities for each class of a mole



Base model representation

Thanks!

Do you have any questions?
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