

AI In Medical Imaging

Customer Segment

Multi - Specialty Hospitals, clinics, physicians.

Solution Category

Computer vision, Deep Learning.

Problem Statement

Severe need for early diagnosis and accurate diagnosis results for diseases
Delayed Metastasis identification whether the cancer has metastasized away from the breast.
Lack of prediction of Cardiovascular Risk Factors.
Delayed identification of Diabetic Retinopathy mostly in early stages.



Current State

Current diagnosis relies on labor and cost intensive imaging techniques, and are prone to error.

These cost intensive techniques are unsuitable for areas with inadequate access to quality medical facilities.

Current diagnosis is based upon one or few doctors opinion.

Future State

Improving patient outcomes by providing early detection and treatment.

Improved diagnosis accuracy to limit or even reverse the trend that characterizes the diffusion of such diseases.

Automated grading has potential benefits such as increasing efficiency, reproducibility, and coverage of screening programs, reducing barriers to access.

Machine learning leverages the power of many doctors to come up with a diagnosis.

Solution Proposition

Our method leverages a convolutional neural network (CNN) architecture and Deep Learning algorithms of Artificial Intelligence to discover the solution, here are some of the examples:

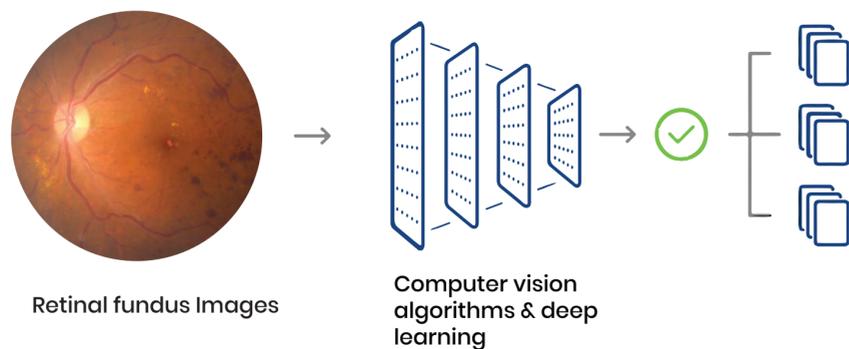
- A framework to automatically detect and localize tumors as small as 100 x100 pixels in giga-pixel microscopy images sized 100,000 x100,000 pixels.
- Retinal Fundus images form the input of a deep neural network consisting of residual blocks, an attention layer to learn the most predictive eye features, to predict cardiovascular risk factors.

Value Drivers/Benefits Realized:

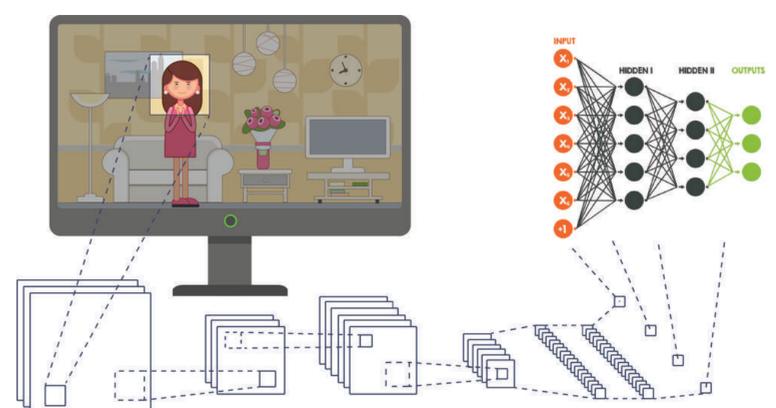
High potential diagnostic results.

Reduced cost of Labor

Diabetic Retinaopathy Prediction



Metastasis Detection



Algorithms used

convolutional Neural Networks, Attention Algorithms, Deep Learning.