RETI-SPECT
An insight into every eye's future

Reti-Spect

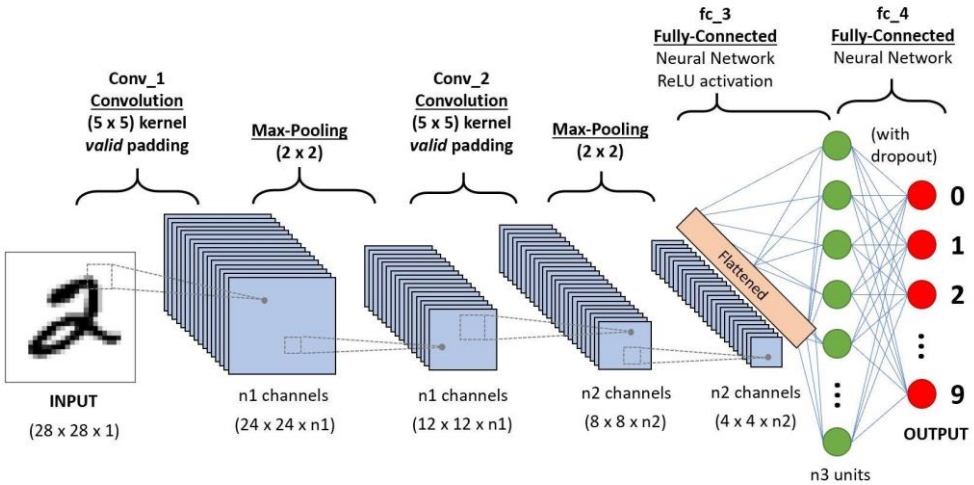
About RetiSpect

The goal of our device is to address a pressing healthcare issue: The accurate diagnosis of widespread eye diseases that impact millions of people globally. Swiftly identifying and categorizing conditions such as cataract, diabetic retinopathy, glaucoma, and macular degeneration is essential for successful treatment and the prevention of vision impairment.

Features of RetiSpect

- RetiSpect it is a device with an app that utilizes the phone's camera with a custom-made ophthalmoscope and to click pictures of the retina.
- The user uploads the picture of their retina to the app on their phone, which the app further analyses and classifies into diseased and normal categories.
- RetiSpect App has been developed with a CNN (Convolutional Neural Network) model trained on retinal images.

The working of the AI



- The app is based on a convolutional neural network that divides the picture into layers analyses then flattens it then makes it run through a fully connected node neural network.

- The Neural network then checks all possibilities and the most probable one is the final output.

- The frontend of the app is cross-platform and is made with flutter and the lens and the device itself is 3D printed frame that clamps to your smartphone to click pictures of the retina.

- The device in conjunction with the App can accurately (Accuracy of about 91%+) classify eye diseases such as cataract, diabetic retinopathy, and glaucoma. This can potentially be used for early diagnosis of multiple eye diseases.

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Tools we are using

- We are using python as our preferred programming language with keras, tensorflow and scikit-learn.

- For the frontend we are using flutter for the Android apps.