TITLE: A Computer Implemented Process to Enhance Edge defect detection and other defects in ophthalmic lenses

ABSTRACT

The invention is a computer implemented process directed towards a Deep learning neural network architecture to create object detection model using high resolution images. More specifically, the invention is directed towards enhancing the classification accuracy and reliability of edge inspection in contact lenses. The invention is a Computer implemented process to represent a software architecture comprising software components and their inter dependencies that represents the core functional modules of an application. The system and method of the invention captures a high resolution image, transforms the circular edge of the lens to a Horizontal line representing the circular edge, restricting the image size by eliminating the pixel information around the edge, dividing the horizontal edge image into overlapping portions, and stacking the extracted images vertically to form a single high-resolution image that is ideal to be processed and analysed by Convolution Neural networks after augmenting the original image dataset with new images generated by Generative Adversarial Networks, to enable accurate classification of the defects.

[Fig. 1]