

(54) Title of the invention : DEEP LEARNING-BASED DIAGNOSIS OF THORACIC DISEASES AND DISORDERS

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(57) Abstract :  
 ABSTRACT DEEP LEARNING-BASED DIAGNOSIS OF THORACIC DISEASES AND DISORDERS The present invention provides a system and method for detecting a thoracic disease, disorder, or condition. It comprises: generating a machine learning classifier that classifies medical data, including image data, into one of a plurality of classifications, wherein the machine learning classifier is generated by training a convolutional neural network using non-domain images that are not labeled with any of the plurality of classifications, and retraining upper layers of the convolutional neural network using domain images that are ophthalmic images labeled with one or more of the plurality of classifications, while retaining lower layers of the convolutional neural network that were trained using the non-domain images; obtaining an x-ray image of an individual; evaluating the x-ray image using the machine learning classifier to generate a determination of the thoracic disease, disorder, or condition; and providing the determination to the individual or a third party. [Figure 1]

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