

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202341004318 A

(19) INDIA

(22) Date of filing of Application :22/01/2023

(43) Publication Date : 17/02/2023

(54) Title of the invention : A SYSTEM FOR DIAGNOSIS OF ROP SEVERITY FROM ULTRASOUND DIGITAL B-SCAN IMAGES USING BDPO-SS-DCNN TECHNIQUE

(51) International classification :A61B0008080000, G06T0007000000, A61B0008000000, G06K0009620000, G06N0003040000

(86) International Application No Filing Date :PCT// :01/01/1900

(87) International Publication No : NA

(61) Patent of Addition to Application Number Filing Date :NA :NA

(62) Divisional to Application Number Filing Date :NA :NA

(71)Name of Applicant :

**1)Mrs. K R N Aswini**

Address of Applicant :Research Scholar, SCSVMV Deemed University, Kanchipuram, Tamil Nadu, 631561 -----

**2)Dr. S Vijayaraghavan**

Name of Applicant : NA

Address of Applicant : NA

(72)Name of Inventor :

**1)Mrs. K R N Aswini**

Address of Applicant :Research Scholar, SCSVMV Deemed University, Kanchipuram, Tamil Nadu, 631561 -----

**2)Dr. S Vijayaraghavan**

Address of Applicant :Assistant Professor, SCSVMV Deemed University, Kanchipuram, Tamil Nadu, 631561 -----

(57) Abstract :

The present invention relates to system for diagnosis of retinopathy of prematurity (ROP) severity from ultrasound digital B-scan images using binary decomposition of polar orientation-scale space deep convolutional neural network (BDPO-SS-DCNN) technique. The system comprising an image acquisition module to obtained ultrasound images of retina using an ophthalmic ultrasound device. An image pre-processing module to remove noise and improving quality of the ultrasound images. A feature extraction module to extract relevant features from the ultrasound images using the BDPO-SS. A classification module to classify the images into different levels of ROP severity based on the extracted features using DCNN. A diagnosis module to make a diagnosis of the ROP severity using output of the classification module. A user interface module to facilitate a user to interact with the system by inputting patient information, viewing images, and receiving diagnostic results.

No. of Pages : 22 No. of Claims : 10