

Improved Classification of stages in Diabetic Retinopathy disease using Deep learning Algorithm

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Abstract

Diabetic Retinopathy is a diabetes complication that affects eye. It is an ophthalmic disease that reparations retinal blood vessels. Diabetic retinopathy happens due to the presence of huge amount of glucose in the blood vessels affects the retinal microvasculature. Pre-emptive symptoms of diabetic retinopathy are helpful for identifying the vision loss. There are several stages in predicting diabetic retinopathy. The stages are normal, mild, moderate, severe and proliferative diabetic retinopathy. The ophthalmologists observe the patient fundus images to diagnose the fatal disease and is found to be in error. The computer vision methods are proposed to detect diabetic retinopathy stages. However, these methods are not able to encode the complex macular edema feature and classify DR stages in a very low accuracy. In this paper, hundred and one deep convolutional neural network ResNET 101 model is proposed to encode the macular edema feature and improve the classification for all the five stages of DR. The training set is 413 (80%) and testing set is 103 (20%) is considered for analysis. The proposed experimental results show that detects different stages of diabetic retinopathy and performs better when compared to the existing techniques. ResNET 101 deep convolutional neural network is implemented, tested and the accuracy is compared with the ResNET 50 algorithm.



Biography:

G.Ananthi received the B.E. degree in Electronics and Communication Engineering, from R.V.S.College Engineering and Technology, Dindigul, India in 2000 and M.E Degree in Applied Electronics P.S.N.A.College of Engineering and Technology, Dindigul, India in 2005. From 2001 to 2003 and from 2005 to 2006, she was a Lecturer with a Department of Electronics and Communication Engineering, P.S.N.A. College of Engineering and Technology, Dindigul, India. From 2006 to

till date, she was Assistant Professor with a Department of Electronics and Communication Engineering, Thiagarajar College of Engineering, Madurai, India. She has published six International Journal papers and twenty two research papers in National and International conferences. Her Research interests include in physical layer aspects of wireless communication systems, energy harvesting, Vehicular networks and deep learning for finding eye diseases.

Speaker Publications:

1. Uplink SINR Analysis in Massive MIMO Systems Using Ginibre Point Process.
2. Interference Cancellation Using Autocorrelation Division Multiple Access Filter in MIMO Ad-Hoc Networks.
3. Performance analysis of vehicular Ad-hoc networks with space shift keying modulation.
4. Outage probability analysis of multiple input multiple output ad-hoc networks with random topology.
5. Performance analysis of MIMO ad-hoc networks with quantized beamforming and imperfect channel state information.

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