**Abstract**

Human retinal image plays a vital role in detection and diagnosis of various eye diseases for ophthalmologist. Automated blood vessel segmentation diagnoses many eye diseases like diabetic retinopathy, hypertension retinopathy, retinopathy of prematurity or glaucoma based on the feature extraction. Automated image analysis tool based on machine learning algorithms are the key point to improve the quality of image analysis. Deep learning (DL) is a subset of machine learning which is completely based on artificial neural network. It helps a machine to analyze the data efficiently. Deep learning is one extensively applied techniques that provides state of the art accuracy. Different types of neural network and platform used for DL also discussed. This paper reviews the different DL approaches for blood vessels segmentation. It concludes that the deep learning methods produces high level of accuracy in disease identification