Abstract

Diabetic retinopathy (DR) is an eye disease caused by the complication of diabetes and we should detect it early for effective treatment. As diabetes progresses, the vision of a patient may start deteriorate and lead to diabetic retinopathy. As a result, two groups were identified, namely non-proliferative diabetic retinopathy (NPDR) and proliferative diabetic retinopathy (PDR). In this paper, to diagnose diabetic retinopathy, two models like Probabilistic Neural network (PNN) and Support vector machine (SVM) are described and their performances are compared. Experimental results show that PNN has an accuracy of 89.60% and SVM has an accuracy of 97.608%. This infers that the SVM model outperforms the other model.

References

- Advanced Vision Care: http://www.advancedvisioncare.com/conditions.php
- Thomas Walter, Jean-Claude Klein, Pascale Massin, and Ali Erginay, &quot;A
SVM and Neural Network based Diagnosis of Diabetic Retinopathy


- Jie Tian, Shanhua Xue, Haining Huang; Classification of Underwater Objects Based on Probabilistic Neural Network; Fifth International Conference on Natural Computation, IEEE, 2009.


- Yosawin Kangwanariyakul, Chanin Nantasenamat, Tanawut Tantimongcolwat, Thanaokorn Naenna, "Data Mining Of Magnetocardiograms For Prediction of Ischemic Heart Disease; EXCLI Journal, 2010.


SVM and Neural Network based Diagnosis of Diabetic Retinopathy

- Fundus Camera: http://en.wikipedia.org/wiki/Fundus_camera
- C. Sinthanayothin, V. Kongbunkiat, S. Phoojaruenchanachai, A. Singalavani,

Index Terms
Computer Science Artificial Intelligence

Keywords
Diabetic Retinopathy Probabilistic Neural Network Support Vector Machine Sensitivity Specificity