**EIARG1: Digital Retinal Images Data Set**

**1 Introduction**

The EIARG1 database has been provided by the Eye Images Analysis Research Group for image based studies on retinal blood vessel tortuosity in diabetic retinopathy. The research community is invited to test its algorithms on this database.

**2 Using the database**

The data included in this database can be used, free of charge, for research and educational purposes. Copy, redistribution, and any unauthorized commercial use are prohibited. Any researcher reporting results that use this database must acknowledge the EIARG1 data set by adding the following information:

"A novel curvature based algorithm for automatic grading of retinal blood vessel tortuosity (preprint)".

In addition, we appreciate to hear about any publications that use the EIARG1 database. Feedback on the database and this website is also welcomed. We further encourage authors and ophthalmologists to give us their grading of the data set. These grading would be provided on the website with reference to their work for future use by other research groups. The person to contact is Hamid Reza Pourreza (hpourreza@ieee.org)

**3 Data description**

10 images of retina with a 575 ×479 resolutionwere chosen byexperts in Retina Research Center, Mashhad University of Medical Science in Khatam-al-Anbya hospital of Mashhad, Mashhad, Iran. Photographs were taken by a mydriatic digital fundus camera (Topcon TRC.50EX) with a 50 degree field of view.

**4 Medical diagnoses**

Five ophthalmologists graded the tortuosity of the images on a scale of one to ten. To see these gradings and results of nonlinear and linear curvature methods please refer to the annotation file attached to the zip file.