Abstract

Estimating human age automatically via facial image analysis has lots of potential to be applied in the real world. However, estimating human age is not an easy thing to do. Male and female may also age differently. Age estimation task is required on some application. One of them is an application to restrict access to certain age limits. In this case, the accuracy should be considered high. High accuracy system is necessary because misinterpretation can cause a fatal impact.

This final project uses Manifold Learning to extract features ang Locally Adjusted Robust Regression (LARR) to imitate the human ability for estimating age based on face images. By using Support Vector Regression as robust regressor and Local Age Adjustment as the age adjuster can produce a system that has a high accuracy. We also compare the performance between Support Vector Regression and Quantile Regression, which one will be best for age estimation.

AS the result of experiments using LARR, the best MAE is 4.1637 in female dataset and 4.3861 in male dataset. In previous testing has been performed several times with some variation of parameters. More detailed specifications of datasets also determines the magnitude of MAE. According to its complexity, Quantile Regression has better performance than Support Vector Regression, which makes Quantile Regression better in age estimation.

Keywords: *estimation, age, Manifold Learning, Support Vector Regression, Quantile Regression*