

Improvement of Ground Truth Data for Eye Location on Infrared Driver Recordings

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Abstract : Labeling is a very costly and time consuming process which aims to generate datasets for training neural networks in several functionalities and projects. For driver monitoring system projects, the need for labeled images has a significant impact on the budget and distribution of effort. This paper presents the modifications done to an algorithm used for the generation of ground truth data for 2D eyes location on infrared images with drivers in order to improve the quality of the data and performance of the trained neural networks. The algorithm restrictions become tougher, which makes it more accurate but also less constant. The resulting dataset becomes smaller and shall not be altered by any kind of manual label adjustment before being used in the neural networks training process. These changes resulted in a much better performance of the trained neural networks.

Keywords : labeling automation, infrared camera, driver monitoring, eye detection, convolutional neural networks

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