



OPTIMIZATION • LEARNING • ALGORITHMS • APPLICATIONS

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OPTIMIZATION, LEARNING ALGORITHMS AND APPLICATIONS

## BOOK OF ABSTRACTS

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# Welcome

Welcome to OL2A 2022 - International Conference on Optimization, Learning Algorithms and Applications.

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## Long-Term Person Reidentification: Challenges and Outlook

Anderson Manhães, Gabriel Matos, Douglas O. Cardoso, Milena F. Pinto, Jefferson Collares,  
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Person reidentification, i.e., retrieving a person of interest across several non-overlapping cameras, is a task that is far from trivial. Despite its great commercial value and wide range of applications (e.g., surveillance, intelligent environments, forensics, service robotics, marketing), it remains unsolved, even when the individuals do not change clothes during the recognition period. This paper provides an outlook on long-term person reidentification, an emerging research topic regarding when consecutive acquisitions of an individual can be found apart for days or even months, making such a task even more challenging. A long-term reidentification system using face recognition is presented to emphasize current techniques' limitations.

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## Is Diabetic Retinopathy Grading Biased by Imbalanced Datasets?

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Diabetic retinopathy is one of the most severe complications of diabetes and the leading cause of vision loss and even blindness. Retinal screening contributes to early detection and treatment of diabetic retinopathy. This eye disease has five stages, namely normal, mild, moderate, severe and proliferative diabetic retinopathy. Usually, highly trained ophthalmologists are capable of manually identifying the presence or absence of retinopathy in retinal images. Several automated deep learning (DL) based approaches have been proposed and they have been proven to be a powerful tool for DR detection and classification. However, these approaches are usually biased by the cardinality of each grade set, since overall accuracy benefits the largest sets in detriment of smaller ones. In this paper, we applied several state-of-the-art DL approaches, using a 5-fold cross-validation technique. The experiments were conducted on a balanced DDR dataset containing 31330 retina fundus images by completing the small grade sets with samples from other well known datasets. This balanced dataset increases robustness of training and testing tasks as they used samples from several origins and obtained with different equipment. The results confirm the bias introduced by using imbalanced datasets in automatic diabetic retinopathy grading.

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