International Conference on Optimization, Learning Algorithms and Applications

OL2A'2021

BOOK OF ABSTRACTS

Instituto Politécnico de Bragança
July 19-21, 2021

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5300-253 Bragança - Portugal
ISBN: 978-972-745-291-0

Book cover: *Divaga Design*

Welcome

Welcome to OL2A 2021 - International Conference on Optimization, Learning Algorithms and Applications.

OL2A offers a forum for the research community on optimization and learning to get together and share the latest developments and techniques as well as develop new paths and collaborations.

OL2A provides a wide scope of presentations, covering many areas of optimization and learning and state of the art applications to multi-objective optimization, optimization for machine learning, machine learning for optimization, optimization and learning under uncertainty and 4th industrial revolution.

It is with great pleasure that the Organizing Committee welcomes you all to OL2A 2021!

The OL2A'2021 organization committee,

Ana Isabel Pereira, Florbela Fernandes, João Paulo Coelho, João Paulo Teixeira, Maria Pacheco, Paulo Alves and Rui Lopes

Towards a High-Performance Implementation of the MCSFilter Optimization Algorithm

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Multistart Coordinate Search Filter (MCSFilter) is an optimization method suitable to find all minimizers – both local and global – of a non convex problem, with simple bounds or more generic constraints. Like many other optimization algorithms, it may be used in industrial contexts, where execution time may be critical in order to keep a production process within safe and expected bounds. MCSFilter was first implemented in MATLAB and later in Java (which introduced a significant performance gain). In this work, a comparison is made between these two implementations and a novel one in C that aims at further performance improvements. For the comparison, the problems addressed are bound constraint, with small dimension (between 2 and 10) and multiple local and global solutions. It is possible to conclude that the average time execution for each problem is considerable smaller when using the Java and C implementations, and that the current C implementation, though not yet fully optimized, already exhibits a significant speedup.

SMACovid-19 – Autonomous Monitoring System for Covid-19

Rui Fernandes and José Barbosa

MORE – Laboratório Colaborativo Montanhas de Investigação – Associação

The SMACovid-19 project aims to develop an innovative solution for users to monitor their health status, alerting health professionals to potential deviations from the normal pattern of each user. For that, data is collected, from wearable devices and through manual input, to be processed by predictive and analytical algorithms, in order to forecast their temporal evolution and identify possible deviations, predicting, for instance, the potential worsening of the clinical situation of the patient.
