

Construct, Merge, Solve & Adapt: A Hybrid Algorithm With a Resemblance to Evolutionary Algorithms

SPEAKER Dr Christian Blum

Senior Research Scientist
Artificial Intelligence Research
Institute (IIIA)

Spanish National Research Council
(CSIC)
Spain

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6th Floor, Yellow Zone
Yeung Kin Man Academic Building
City University of Hong Kong
83 Tat Chee Avenue
Kowloon Tong

ABSTRACT

Construct, Merge, Solve & Adapt (CMSA) is a recent hybrid algorithm for solving combinatorial optimization problems. This algorithm tackles reduced problem instances in an iterative way by making use, for example, of general-purpose integer linear programming (ILP) solvers. In this seminar we will first present CMSA in general terms. Subsequently, we will focus on the following recent developments. The first one deals with the use of a learning method (ant colony optimization) for the generation of the reduced problem instances at each iteration. The second one is about a problem-independent version of CMSA for solving any combinatorial problem that can be modeled as a binary integer linear program.

BIOGRAPHY

Dr Christian Blum is a Senior Research Scientist at the Artificial Intelligence Research Institute (IIIA) of the Spanish National Research Council (CSIC). His research interests are twofold: On one side he is interested in swarm intelligence, which is an artificial intelligence discipline based on the inspiration taken, for example, from the collective behaviour of social insects, flocks of birds, and fish schools. On the other side he works on the hybridization of metaheuristics with more classical artificial intelligence and operations research methods. During his research career he has published around 170 papers in journals, conference proceedings, and books. Moreover, he currently acts as area editor for the journal *Computers & Operations Research*, dealing with all submissions concerning metaheuristics and heuristics. For obtaining more information please refer to <https://www.iiia.csic.es/~christian.blum/>.

All are welcome!



In case of questions, please contact Prof Qingfu Zhang at Tel: 3442 8632, E-mail: qingfu.zhang@cityu.edu.hk, or visit the CS Departmental Seminar Web at <http://www.cs.cityu.edu.hk/>.

