INTERNATIONAL

INVITED SESSION SUMMARY

Title of Session:

Advances from Heuristics to Hyperheuristics: new trends and applications in hard optimization and constraint reasoning

Name, Title and Affiliation of Chair:

Pr. Sadok BOUAMAMA, FCIT, University of Jeddah, KSA
Dr. Moez HAMMAMI, University of Tunis, Tunisia

Details of Session (including aim and scope):

Application of exhaustive search for hard optimization problems is thwarted by the huge computational cost which is, generally, impossible to realize in a bearable time. For these reasons, heuristic and metaheuristics have been widely applied to tackle this type of problems. However; their application to specific problems requires problem-specific coding and parameter adjusting to produce good results. Hyperheuristics are new optimization approaches having a higher level of abstraction than metaheuristics. The strength of hyperheuristics is that they perform on a search space of low-level problem-specific heuristics rather than directly on the search space of solutions, as it is the case with metaheuristic approaches. Hyperheuristics takes advantages from machine learning techniques to decide when and where to apply each single low-level heuristic. Then, hyperheuristics could be easier to adapt for any specific optimization problem. This special session focuses on, but not limited to, new works showing original hyperheuristics and proving their efficiency on well-known problems.

This special session is, mainly, expected to invite recent original researches on the following topics:

- Genetic algorithms
- Particle swarm
- Honey bee optimization
- Ant colony
- Mimetic algorithms
- Local search
- Distributed hyperheuristics
- Distributed metaheuristics
- Parallel metaheuristics
- Parallel hyperheuristics
- Constraint reasoning
- New heuristics
- New metaheuristics
- New hyperheuristics
- learning strategies
- Application for real life problems

Main Contributing Researchers / Research Centres (tentative, if known at this stage):

- Nahla BEN AMOR, ISG Tunis, University of Tunis, Tunisia
- Ahlem BEN HASSINE, FCIT, University of Jeddah, KSA
- Hajer BEN OTHMAN, FCIT, University of Jeddah, KSA
- Sadok BOUAMAMA, FCIT, University of Jeddah, KSA
- Maurice CLERC, Independant Consultant, France
- Russell EBERHART, Purdue School of Engineering and Technology, Indianapolis, USA
- David E. GOLDBERG, University of Illinois Urbana-Champaign, Illinois, USA
- Zied ELOUADI, ISG Tunis, University of Tunis, Tunisia
- Moez HAMMAMI, COSMOS, ISG Tunis, University of Tunis, Tunisia

- James KENNEDY, US Bureau of Labor Statistics, Washington DC, USA
- Ouajdi KORBAA, ISIT'COM, University of Sousse, Tunisia
- Patrick SIARRY, University of Paris 12, France
- Moncef TAGINA, COSMOS, ENSI, University of Manouba, Tunisia
- Elgazali TALBI, INRIA DOLPHIN, Polytech'Lille, University of Lille 1, France

Website URL of Call for Papers (if any):

http://kes2017.kesinternational.org/cmsISdisplay.php

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