

Preface

These proceedings include a selection of the best papers presented at the International Conference on Swarm Intelligence Based Optimization, ICSIBO 2016, held in Mulhouse (France).

ICSIBO 2016 was a continuation of the conferences OEP 2003 (Paris), OEP 2007 (Paris), ICSI 2011 (Cergy-Pontoise), and ICSIBO 2014 (Mulhouse).

The aim of ICSIBO 2016 is to highlight the theoretical progress of swarm intelligence metaheuristics and their applications. Swarm intelligence is a computational intelligence technique involving the study of collective behavior in decentralized systems. Such systems are made up of a population of simple individuals interacting locally with one another and with their environment. Although there is generally no centralized control on the behavior of individuals, local interactions among individuals often cause a global pattern to emerge. Examples of such systems can be found in nature, including ant colonies, animal herding, bacteria foraging, bee swarms, and many more. However, swarm intelligence computation and algorithms are not necessarily nature-inspired.

Authors had been invited to present original work relevant to swarm intelligence, including, but not limited to: theoretical advances of swarm intelligence metaheuristics; combinatorial, discrete, binary, constrained, multi-objective, multi-modal, dynamic, noisy, and large-scale optimization; artificial immune systems, particle swarms, ant colony, bacterial foraging, artificial bees, fireflies algorithm; hybridization of algorithms; parallel/distributed computing, machine learning, data mining, data clustering, decision making and multi-agent systems based on swarm intelligence principles; adaptation and applications of swarm intelligence principles to real-world problems in various domains.

Each submitted paper was reviewed by three members of the international Program Committee. Two reviewing processes were undertaken: one before the conference and one after the conference.

We would like to express our sincere gratitude to our invited speakers: Brigitte Wolf and Maurice Clerc. The success of the conference resulted from the input of many people to whom we would like to express our appreciation: the members of Program Committee and the secondary reviewers for their careful reviews that ensure the quality of the selected papers and of the conference. We take this opportunity to thank the different partners whose financial and material support contributed to the organization of the conference: Université de Haute Alsace, Faculté des Sciences et Techniques et Institut Universitaire de Technologie de Mulhouse. Last but not least, we thank all the

authors who submitted their research papers to the conference, and the authors of accepted papers who attended the conference to present their work. Thank you all.

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