The Workshops at PPSN 2016

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Abstract. Workshops have a longstanding tradition at PPSN. This document provides a short description of the workshops that were held at the 2016 edition of the conference. For each workshop we provide a general description of the aim and scope, in addition to the list of accepted papers.

1 Introduction

Workshops, in addition to the main program, have a longstanding tradition at the conference series on Parallel Problem Solving From Nature (PPSN). Consequently, the PPSN 2016 Organizing Committee invited proposals for workshops to be held in conjunction with the main PPSN conference. The workshops at PPSN are intended to be a forum for presenting and discussing, for example, new emerging approaches or critical reflections within a subfield. They often provide an excellent opportunity to meet people with similar interests, to be exposed to cutting-edge research and to exchange ideas in an informal setting. The responsibility of the workshops is solely in the hands of the organizers, who care for their coordination, publicity—that is, for sending out call for papers/abstracts—, collecting and reviewing the papers/abstracts, and maintaining a webpages providing the lists of accepted talks. As in previous years, workshop organizers were also in 2016 able to decide between half and full day workshops. The workshop format was up to the organizers. However, as workshop co-chairs we encouraged to facilitate interactive sessions and suggested to solicit concept papers or abstracts of not more than a few pages length, instead of full papers. All workshops were held during the first two days of PPSN, which are traditionally dedicated to workshops and tutorials.

2 The Four Workshops

At PPSN 2016, four workshops in very different areas of the field took place–some nicely complementing accepting tutorials presented earlier at the conference. In the following we provide a short description of the aim and scope of these workshops, together with their list of accepted papers.

J. Handl et al. (Eds.): PPSN XIV 2016, LNCS 9921, pp. 1007–1011, 2016.
DOI: 10.1007/978-3-319-45823-6_94

Workshop Title: 2nd International Workshop on Advances in Multi-modal Optimization

Organizers: Mike Preuss, Michael G. Epitropakis and Xiaodong Li
URL: http://www.epitropakis.co.uk/ppsn2016-niching/

Aim and Scope: This workshop aimed to bring together researchers from evolutionary computation and related areas who are interested in Multi-modal Optimization. This is a currently forming field, and the organizers aimed for a highly interactive and productive meeting that would make a step forward towards defining it. The workshop provided a unique opportunity to review the advances in the current state of the art in the field of Niching methods. Further discussion dealt with several experimental/theoretical scenarios, performance measures, real-world and benchmark problem sets and outline the possible future developments in this area. Positional statements, suggestions, and comments were very much welcomed by the organizers.

List of Accepted Abstracts/Papers

Authors	Title
C. Zarges	Towards theoretical analysis in Multi-modal Optimization
S. Wessing, G. Rudolph and M. Preuss	Assessing Basin Identification Methods for Locating Multiple Optima
S. Nallaperuma, K. Gao and F. Neumann	Feature based analysis on problem hardness
J. K. Pugh, L. B. Soros and K. O. Stanley	Quality Diversity: A New Kind of Multimodal Search
P. Kerschke and C. Grimme	Multi-modality in Continuous Multi-Objective Optimization
A. Moshaiov	Multi-concept Optimization vs. Multi-modal Optimization
K. Bibiks and J.-P. Li	Discrete species conserving cuckoo search for resource-constrained project scheduling problems

Workshop Title: Landscape-Aware Heuristic Search

Organizers: Nadarajen Veerapen and Gabriela Ochoa
URL: http://www.cs.stir.ac.uk/events/ppsn2016-landscape/

Aim and Scope: Fitness landscape analysis and visualization can provide significant insights into problem instances and algorithm behavior. The aim of this workshop was to encourage and promote the use of landscape analysis to improve search algorithms and their understanding. Examples include landscape analysis as a tool to inform the design of algorithms, landscape metrics

for online adaptation of search strategies, mining landscape information to predict instance hardness and algorithm runtime. The workshop sought to bring together researchers interested in landscape analysis and in exploiting problem structure to develop informed search strategies. The workshop provided a unique opportunity to present existing work, propose new ideas or put forward position statements.

List of Accepted Abstracts/Papers

Authors	**Title**
V. Santucci and A. Milani	A Triple Interpretation of Combinatorial Search Spaces
S. Tari, M. Basseur, and A. Goëffon	Climbing Fitness Landscapes with the Maximum Expansion Pivoting Rule
P. A. Consoli, Y. Mei, L. L. Minku and X. Yao	Dynamic Selection of Evolutionary Operators Based on Online Learning and Fitness Landscape Analysis
P. Kerschke and H. Trautmann	Exploratory Landscape Analysis By Using the R-Package flacco
K. Alyahya and J. E. Rowe	Fitness Landscape Analysis of a Class of NP-Complete Binary Packing Problems
F. Daolio, A. Liefooghe, S. Verel, H. Aguirre and K. Tanaka	Fitness Landscape Analysis, Problems Features and Performance Prediction for Multi-objective Optimization
W. B. Langdon and M. Harman	Fitness Landscape of the Triangle Program
D. Whitley, F. Chicano and B. Goldman	Mk Landscapes Problem Structure
S. Verel, F. Daolio, G. Ochoa, and M. Tomassini	Toward Algorithm Portfolio Based on Local Optima Network Features

Workshop Title: Intelligent Transportation Workshop

Organizer: Neil Urquhart
URL: http://www.soc.napier.ac.uk/~40000408/ppsn/

Aim and Scope: This workshop aimed to bring together researchers using nature inspired computing to support intelligent transportation, allowing them to present and discuss ideas and concepts with their peers. Potential participants were asked to submit a one page abstract according to the instructions outlined on the workshop website. Abstracts were peer reviewed and the authors of successful abstracts were invited to give a presentation of 25 min of their work at the workshop. Solicited topics included the optimization of goods deliveries, the optimization of mobile workforce, the use of nature inspired computing techniques with real world transport related data and APIs, and traffic and transport management.

List of Accepted Abstracts/Papers

Authors	Title
J. Ouenniche	Invited Talk
A. Fernández-Ares, M. García-Arenas, P. García-Sánchez, V. Rivas-Santos and J. J. Merelo	Nowcasting traffic
A. Ekart, E. Ilie-Zudor and C. Buckingham	Combining Human Expertise and Machine Learning for Intelligent Transportation Resource Management
N. Urquhart and A. Fonzone	Using multiple real world objectives in mobile workforce problems
M. Adham and P. Bentley	Evaluating Fitness Functions within the Artificial Ecosystem Algorithm and their Application to Bicycle Redistribution
K. Sim and E. Hart	A Combined Generative and Selective Hyper-heuristic for the Vehicle Routing Problem

Workshop Title: Natural Computing in Scheduling and Timetabling

Organizers: Ahmed Kheiri, Rhyd Lewis and Ender Özcan
URL: http://ahmedkheiri.bitballoon.com/ppsn2016workshop/

Aim and Scope: The aim of this workshop was to bring together researchers and practitioners to share their experiences and report on emerging approaches in solving real-world scheduling problems. A particular interest was on approaches that give a deeper insight into scheduling problem classes, and that enable the exploitation of structural information during the automated search for a solution to a given problem. General purpose approaches used for the automated generation of heuristics for solving single and multi-objective scheduling problems and issues related to development of such approaches were also of particular interest.

List of Accepted Abstracts/Papers

Authors	Title
J. Branke	Invited Talk: Evolutionary Design of Production Scheduling Heuristics
J. Gasior and F. Seredynski	Multi-objective Scheduling in Unreliable Distributed Computing Environment
N. Pillay and E. Özcan	The Role of Generation Constructive Hyper-Heuristics in Educational Timetabling
A. Kheiri, R. Lewis, J. Thompson and P. Harper	Heuristic-based Method for Scheduling Surgical Procedures

3 Final Words

It is worth noting that the workshop on *Landscape-Aware Heuristic Search* that was originally planned for half a day, was extended to a 3/4-day workshop due to an unexpected large number of submissions. Summarizing we can say that all workshops, with their combined contribution of 26 presentations to the conference program, enjoy great popularity and made a significant contribution to PPSN 2016.

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