Call for Papers

2017 IEEE Symposium on Model Based Evolutionary Algorithms (IEEE MBEA'17) in Hawaii, USA.

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Special Session on **Data-Driven Evolutionary Optimization of Computationally Expensive Problems**

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Summary of the special session:

Meta-heuristic algorithms, including evolutionary algorithms and swarm optimization, face challenges when solving time-consuming problems, as typically these approaches require thousands of function evaluations to arrive at solutions that are of reasonable quality. Surrogate models, which are computationally cheap, have in recent years gained in popularity in assisting meta-heuristic optimization, by replacing the compute-expense/time-expensive problem during phases of the heuristic search. However, due to the curse of dimensionality, it is very difficult, if not impossible to train accurate surrogate models. Thus, appropriate model management techniques, memetic strategies and other schemes are often indispensable. In addition, modern data analytics involving advance sampling techniques and learning techniques such as semi-supervised learning, transfer learning and active learning are highly beneficial for speeding up evolutionary search while bringing new insights into the problems of interest. This special session aims at bringing together researchers from both academia and industry to explore future directions in this field.

Scope and Topics:

The topics of this special session include but are not limited to the following topics:
-Surrogate-assisted evolutionary optimization for computationally expensive problems
-Adaptive sampling using machine learning and statistical techniques
-Surrogate model management in evolutionary optimization
-Data-driven optimization using big data and data analytics
-Knowledge acquisition from data and reuse for evolutionary optimization
-Computationally efficient evolutionary algorithms for large scale and/or many-objective optimization problems
-Real world applications including multidisciplinary optimization

Important Dates:

-Paper submission: **July 2, 2017**
-Notification to authors: **August 27, 2017**
-Final submission: **September 24, 2017**
-Early registration: **September 24, 2017**

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