Multi-objective evolutionary algorithms for optimal scheduling

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Curriculum Vitae

Yali Wang was born in Baiyin, China. She received her BSc of Computer Science at Wuhan University, China in 1997. After that, she worked first as a software engineer and then as a configuration management officer in H3C Technologies Co., Limited, Beijing, China. In 2015, she came to the Netherlands and completed her MSc at Leiden Institute of Advanced Computer Science (LIACS), Leiden University in 2017. Right after, she worked as a PhD at the same university under the supervision of Michael Emmerich and Thomas Bäck. Her research interests include multi-objective optimization, evolutionary algorithm, scheduling optimization, prediction-based optimization, preference based multi-objective optimization and dynamic optimization.

Acronyms

AP-DI-MOEA

Automatic Preference based Diversity Indicator-based Multi-objective Evolutionary Algorithm

DF

Desirability Function

DI-MOEA

Diversity Indicator-based Multi-objective Evolutionary Algorithm

DM

Decision Maker

DRS

Dominance Resistant Solution

EA

Evolutionary Algorithm

EAF

Empirical Attainment Function

EMO

Evolutionary Multi-objective Optimization

EMOA

Evolutionary Multi-objective Optimization Algorithm

EP

Evolutionary Programming

ES

Evolution Strategy

FJSP
Flexible Job shop Scheduling Problem

GA
Genetic Algorithm

GD
Generational Distance

GI
Gap Indicator

GP
Genetic Programming

HV
Hypervolume

IBEA
Indicator-based Evolutionary Algorithm

IGD
Inverted Generational Distance

JSP
Job shop Scheduling Problem

MIP-EGO
Mixed integer, Parallel - Efficient Global Optimization

MOEA
Multi-objective Evolutionary Algorithm

MOFJSP
Multi-objective Flexible Job shop Scheduling Problem

MOO
Multi-Objective Optimization

MOP
Multi-objective Optimization Problem

MOVFMSO
Multi-objective Vehicle Fleet Maintenance Scheduling Optimization

NE

Number of Evaluations

NSGA-II

Non-dominated Sorting Genetic Algorithm II

NSGA-III

Non-dominated Sorting Genetic Algorithm III

PF

Pareto Front

ROI

Region of Interest

RUL

Remaining Useful Lifetime

SMS-EMOA

$\mathcal{S}$-Metric Selection Evolutionary Multi-Objective Algorithm

VFMSO

Vehicle Fleet Maintenance Scheduling Optimization