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Paper 89	
Title:	Supervised Learning Linear Priority Dispatch Rules for Job-Shop Scheduling
Paper:	PDF
Track:	General Track
Category:	Long Paper
Author keywords:	job shop scheduling logistic regression supervised learning hyper-heuristics linear classification
EasyChair keyphrases:	dispatching rule (240), model linu (160), job shop scheduling (142), processing time (113), statistical difference (90), data distribution (90), job shop (86), linear priority dispatch rule (80), dispatch rule (80), test set (80), training data (80), job shop problem (79), slack time (70), optimal schedule (70), optimum makespan (70), fixed w linu (63), priority dispatching rule (63), processing time distribution (63), post decision state (63), partial schedule (60), experimental study (50), fixed weight (50), logistic regression (50), generating training data (47), fixed w test set (40), supervised learning (40), maximum value (40), median value (40), gnu linear programming kit (40), mean value (40)
Topics:	experimental analysis, hyperheuristics, software engineering of learning and intelligent optimization methods
Abstract:	This paper introduces a framework in which dispatching rules for job-shop scheduling problems are discovered by analysing the characteristics of optimal solutions. Training data is created via randomly generated job-shop problem instances and their corresponding optimal solution. Linear classification is applied in order to identify good choices from worse ones, at each dispatching time step, in a with supervised learning fashion. The method is purely data-driven, thus less problem specific insights are needed from the human heuristic algorithm designer. Experimental studies show that the learned linear priority dispatching rules outperforms common single priority dispatching rules, with respect to minimum makespan.
Time:	Oct 23, 16:59 GMT

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