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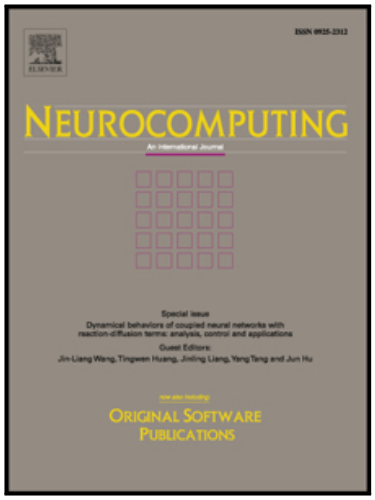

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An Interpretable Neural Fuzzy Inference System for Predictions of Underpricing in Initial Public Offerings

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Abstract

Due to their aptitude in both accurate data processing and human comprehensible reasoning, neural fuzzy inference systems have been widely adopted in various application domains as decision support systems. Especially in real-world scenarios such as decision making in financial transactions, the human experts may be more interested in knowing the comprehensive reasons of certain advices provided by a decision support system in addition to how confident the system is on such advices. In this paper, we apply an integrated autonomous computational model termed genetic algorithm and rough set incorporated neural fuzzy inference system (GARSINFIS) to predict underpricing in initial public offerings (IPOs). The difference between a stock's potentially high value and its actual IPO price is referred as money-left-on-the-table, which has been extensively studied in the literature of corporate finance on its theoretical foundations, but surprisingly under-investigated in the field of computational decision support systems. Specifically, we use GARSINFIS to derive interpretable rules in determining whether there is money-left-on-the-table in IPOs to assist the investors in their decision making. For performance evaluations, we first demonstrate

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