Conclusion

To realize intelligent decision making in smart systems, a weight judgment downward closure property based frequent itemset mining algorithm is proposed

to narrow the searching space of weighted frequent itemsets and improve the time efficiency. Weight judgment downward closure property for weighted frequent itemsets and the existence property of weighted frequent subsets are introduced and proved first. Based on these two properties, the WD-FIM algorithm is described in detail. Moreover, the completeness and time efficiency of WD-FIM algorithm are analyzed theoretically. The performance of the proposed WD-FIM algorithm is verified on both synthetic and real-life datasets.