















mutation) to overcome the nesting effect's problem and find the best fitting rule by minimizing the number of terms based on the classification accuracy.

#### IV. CONCLUSION

This research introduced a new ACO-based rule classification algorithm, that is, the GA-AntMiner. The experimental results showed that our proposed GA-AntMiner significantly outperforms the well-known Ant-Miner, ACO/PSO2, TACO-Miner, CAnt-Miner, and Ant-Miner with hybrid pruner classification algorithms in terms of classification accuracy and model size. Moreover, using the new pruning technique based on the GA concept enabled the GA-AntMiner to be more flexible than the other classifiers. Future research directions are to adapt the parameter value (i.e., mutation rate and crossover rate) on the fly rather than maintaining a constant value to find the best classification rule. This task is essential in the rule classification technique to adjust the dataset's parameter values in designing a classification model.

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