



Figure 7: Comparison of SVM & SVM-GA for S & P INFOTECH Index Futures Contract

5.1 Comparison of Results

The forecasting results of the SVM and SVM-GA for the test set are collected in the table 4 which shows SVM outperforms the SVM-GA in most of the cases. SVM-GA provides a smaller NMSE and MAE and larger DS than those of SVM in most of the cases.

The performance criteria set for our experiment showed a very good agreement of the predicted price with actual price when SVM-GA method is used in comparison to SVM. The NSME for all the futures stock index taken into consideration fall in the range of 0.799 to 1.173. The MAE fall in the range of 0.213 to 0.382 and the last criteria DS starts from 85.971 to 93.377.

Table 4: Comparison of the Results of SVM & SVM-GA

Futures Details	NMSE		MAE		DS	
	SVM-GA	SVM	SVM-GA	SVM	SVM-GA	SVM
S&P CNX NIFTY	0.799	1.135	0.213	0.382	87.317	85.472
S&P BSE FMCG INDEX	0.889	1.012	0.271	0.293	86.192	80.795
S&P INFOTEC H 500	0.903	1.032	0.313	0.332	87.173	85.571
S&P BSE MIDCAP INDEX	1.173	1.352	0.257	0.278	85.971	85.177
S&P BSE OIL & GAS INDEX	0.837	0.929	0.213	0.238	93.377	90.135

6. Conclusion

In this research work, we have examined the feasibility of applying two machine learning models, Support Vector Machines (SVM) and Support Vector Machines with Genetic algorithm (SVM-GA) to financial time-series forecasting for the futures trading in Indian derivative markets. The proposed experiments demonstrated that: SVM-GA provide a promising alternative tool to the Support Vector Machines for financial time series

forecasting as it adopts the Structural Risk Minimization Principle, eventually leading to better generalization than that of conventional technique.

For future work, we intend to optimize the kernel function, parameters and feature subset simultaneously. We would also like to expand this model to apply to instance selection problems.

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