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# Opinion Dynamics-based Learning Approach to Predict Financial Market Trends

## Communication Info

**Authors:**
Hassan BENNANI[1]
Abderrahmane EZ-ZAHOUT[1]

*[1] Computer Science Department, IPSS Research Team, Faculty of Sciences, Mohammed V University, Rabat, Morocco*

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## Abstract

This study introduces a novel method for simulating agent-based opinion dynamics and forecasting stock price trends in financial markets by incorporating reinforcement learning into opinion dynamics models. These models offer a strong foundation for examining how attitudes change over time through social interactions and are frequently used to comprehend how consensus is established within a network of interacting agents. However, the traditional models do not take adaptive behaviour in dynamic environments, such as financial markets, into consideration and instead assumes static effect weights. In order to overcome this constraint, we present a reinforcement learning method that enables agents to learn from their previous encounters and adjust their investment plans in response to market circumstances. Through the use of past financial data, agents are modelled to modify their decisions regarding the purchase, holding, or sale of stocks in response to the profits they derive from changing market patterns.



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