**Abstract**

To many, technical analysis is a valuable and profitable tool in trading and investment decisions.

Based on the principles of technical analysis, this paper proposes an artificial intelligence model, which employs the Adaptive Network Fuzzy Inference System (ANFIS) supplemented by the use of reinforcement learning (RL) as a non-arbitrage algorithmic trading system.

The novel intelligent trading system is capable of identifying a change in a primary trend for trading and investment decisions.

It dynamically determines the periods for momentum and moving averages using the RL paradigm and also appropriately shifting the cycle using ANFIS-RL to address the delay in the predicted cycle.

This is used as a proxy to determine the best point in time to go LONG and visa versa for SHORT. When this is coupled with a group of stocks, we derive a simple form of ‘‘riding the cycles – waves”. These are the derived features of the underlying stock movement. It provides a learning framework to trade on cycles. Initial experimental results are encouraging. Firstly, the proposed framework is able to outperform DENFIS and RSPOP in terms of true error and correlation. Secondly, based on the test trading with five US stocks, the proposed trading system is able to beat the market by about 50 percentage points over a period of 13 years.