

# Algorithmic trading essay



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Algorithmic trading (also known as Black-box trading) refers to the use of automation for trading in financial markets. Simply put, it is computer-guided trading, where a program with direct market access can monitor the market and order trades when certain conditions are met. Earlier, the trading strategies were executed by humans but now it is majorly done by algorithms thus removing human emotion element in trading.

Now, you may be thinking who uses this concept? Well, Algorithmic trading is widely used by investment banks, pension funds, mutual funds, and other buy-side (investor-driven) institutional traders, to divide large trades into several smaller trades to manage market impact and risk. Most of the algorithmic strategies are implemented using Functional Programming Languages like J, APL, OCaml, Scala, Haskell, Erlang, F#, etc. The algorithms used by large brokerages and asset managers are written to the FIX Protocol's Algorithmic Trading Definition Language (FIXatdl), which allows firms receiving orders to specify exactly how their electronic orders should be expressed.

Basic models rely on linear regression, while more complex game-theoretic and pattern recognition or predictive models can also be used to initiate trading. Neural networks and genetic programming have been used to create these models.

Algorithmic traders worldwide use matlab and add-on toolboxes to develop, back test, and deploy mathematical models that detect and exploit market movements. The big fish in Algorithmic Trading (world) are Credit Suisse, Morgan Stanley, Goldman Sachs, Deutsche Bank, Citadel. In India,

Algorithmic Trading started in 2005 and at present 16%-17% of trading in BSE & NSE is algorithmic (London Stock Exchange(40%), NASDAQ (70%-80%)).

Pros:

- Lower transaction cost
- Reduce implementation shortfall
- Speedy execution of trades
- Faster identification of arbitrage opportunities

Cons:

- Low transparency
- Algorithms can be reverse engineered

Algorithms are widely recognized as one of the fastest moving bandwagons in the capital markets and computer programmers are much in demand.

Industry needs you!