ALGORITHMIC TRADING: SYLLABUS

Introduction to Algorithmic Trading: securities, markets, institutions and agents. Automated trading and market making. An example of momentum strategy. Limit orders and the central order book, the Roll model of traded prices.

The dealer problem: inventory control and the Ho and Stoll model. An example of automated market-making strategy.

Pricing and statistical arbitrage: modeling securities using market invariants, PCA and OU-processes. Application to multivariate time series. Z-scores and potential drawbacks.

Optimal execution in a Limit Order Market: implementation shortfall. Limit vs. market orders. Liquidity posting and price markouts. Order management systems, networks and protocols. Network latency.