

Algorithmic Trading

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I) End Goals*

1. Comprehensive Understanding of Trading Types: Gain a deep understanding of various types of trading, including electronic trading and other forms of trading. Analyze their efficiency, usability, and performance/cost comparison to identify the most effective trading methods.
2. Market Microstructure Analysis: Study market microstructure, including its fundamental principles, structure, and design. Explore different world major assets and their markets to understand the dynamics of different trading environments.
3. Trade Order Types and Rules: Investigate different trade order types and their associated rules and instructions. Examine trade order routing methods to optimize order execution and minimize transaction costs.

4. Review of Trading Strategies: Review and analyze various trading strategies, such as impact-driven and opportunistic approaches. Understand the importance of transaction cost analysis in developing optimal trading strategies.
5. Selection of Optimal Trading Strategies: Explore techniques and methodologies for selecting optimal trading strategies based on transaction cost analysis. Develop a framework to evaluate and compare different strategies to maximize profitability while minimizing costs.
6. Advanced Trading strategies : If time permits look into some of advanced techniques like portfolio and multi-asset trading, handling news etc and work on creating one of the automated trading bots using any one of DMA strategy.

II) Timeline*

Week 1: Comprehensive Understanding of Trading Types and understand Market Microstructure Analysis, an overview of world major assets and their markets.

Week 2: Trade Order Types and Rules involved in Algorithmic trading and understanding some popular DMA Strategies.

Week 3: Review on importance of transaction cost analysis and consideration of how the optimal trading strategy can be selected.

Week 4: Focus on specifics of implementing a trading strategy, like intricacies of order placement, execution tactics, and how their performance can be enhanced.

Week 5 (OPTIONAL): Have an outer overview of some of the advanced strategies like the potential of portfolio trading, multi-asset trading, and how to incorporate news in these strategies, and some focus on data mining and AI techniques used in searching relationships between assets, etc.

MIDTERM REPORT

Week 6: Backtesting and automated execution techniques for the creation of a bot with an understanding basic of mean reversion and implementing it on stocks, ETF, and other currencies.

Week 7 (OPTIONAL): Continue working on the trading bot, understanding some of the interday and intraday momentum strategies, and look at their risk management.

Week 8: Launching of our trading bot on any feasible server.

END TERM REPORT

* Subject to change can happen in the following plans and timelines