

algorithmic futures trading

algorithmic futures trading has revolutionized the way traders approach the futures markets by leveraging advanced computational models and automated strategies. This sophisticated form of trading employs algorithms to execute trades based on pre-defined criteria, eliminating emotional bias and enabling faster, more precise decision-making. Algorithmic futures trading integrates quantitative analysis, high-frequency trading techniques, and real-time data processing to capitalize on market opportunities efficiently. As the futures market continues to expand in complexity and volume, the adoption of algorithmic strategies has become essential for competitive edge and risk management. This article explores the fundamentals of algorithmic futures trading, its advantages, commonly used algorithms, risk considerations, and technological requirements. The insights provided aim to enhance understanding of how automated trading systems optimize futures market participation. Below is an outline of the key topics covered in this comprehensive overview.

- Understanding Algorithmic Futures Trading
- Benefits of Algorithmic Trading in Futures Markets
- Popular Algorithms Used in Futures Trading
- Risk Management in Algorithmic Futures Trading
- Technological Infrastructure for Algorithmic Trading

Understanding Algorithmic Futures Trading

Algorithmic futures trading refers to the use of computer algorithms to automatically execute futures contracts based on predefined trading rules and market conditions. These algorithms analyze market data, identify trading signals, and place orders without human intervention. The approach combines elements of quantitative finance, computer science, and market microstructure to optimize trade execution. Unlike manual trading, algorithmic systems can process vast amounts of data at high speeds, allowing for rapid response to changing market dynamics.

Key Components of Algorithmic Futures Trading

Successful algorithmic futures trading systems typically consist of several essential components:

- **Data Feed:** Real-time and historical market data inputs used for analysis.

- **Signal Generation:** Algorithms that identify trading opportunities based on technical indicators or statistical models.
- **Execution Engine:** Automated order placement and management to ensure timely trade execution.
- **Risk Controls:** Built-in mechanisms to monitor and limit exposure and losses.
- **Backtesting Framework:** Simulation tools to evaluate algorithm performance on historical data.

Futures Markets and Their Characteristics

The futures market involves standardized contracts obligating the buying or selling of an asset at a predetermined price and date. These contracts cover a broad range of assets, including commodities, currencies, indices, and interest rates. Futures markets are known for high liquidity and leverage, making them an attractive venue for algorithmic strategies seeking to capitalize on short-term price movements. Understanding market microstructure, settlement mechanisms, and contract specifications is critical for designing effective algorithmic futures trading models.

Benefits of Algorithmic Trading in Futures Markets

Algorithmic futures trading offers multiple advantages over traditional manual trading, enhancing efficiency, accuracy, and consistency. These benefits contribute to improved trading performance and risk management.

Increased Speed and Efficiency

Algorithms execute trades within milliseconds, significantly faster than human traders. This speed advantage enables capturing short-lived market opportunities and reduces slippage. Automated order execution also streamlines the trading process, minimizing operational errors.

Reduced Emotional Bias

Trading decisions driven by algorithms adhere strictly to predefined rules, eliminating psychological influences such as fear and greed. This objectivity ensures consistent application of strategies and disciplined risk management.

Ability to Backtest and Optimize

Algorithmic trading systems can be rigorously tested using historical data, allowing traders to evaluate strategy effectiveness and refine parameters

before live deployment. This iterative process enhances the robustness and profitability of futures trading algorithms.

Diversification and Scalability

Automated systems can manage multiple futures contracts and strategies simultaneously, enabling portfolio diversification and scaling of operations. This capability maximizes market exposure and potential returns.

Popular Algorithms Used in Futures Trading

Various algorithmic strategies are applied to futures trading, each tailored to specific market conditions and trading objectives. These approaches often combine technical analysis, statistical methods, and machine learning techniques.

Trend Following Algorithms

Trend-following strategies identify and capitalize on sustained price movements by entering trades in the direction of the trend. Common indicators include moving averages, momentum oscillators, and breakout patterns. These algorithms aim to capture large price moves while minimizing exposure during sideways markets.

Mean Reversion Strategies

Mean reversion algorithms assume that prices will revert to their historical average after deviating significantly. These systems trade against extreme price movements, entering positions when prices are overbought or oversold. Statistical measures such as Bollinger Bands and relative strength index (RSI) are often employed.

Arbitrage and Statistical Arbitrage

Arbitrage algorithms exploit price discrepancies between related futures contracts or between futures and underlying assets. Statistical arbitrage uses quantitative models to detect temporary mispricings and execute offsetting trades. These strategies require high-speed data processing and execution capabilities to capture fleeting opportunities.

Machine Learning-Based Algorithms

Advanced algorithmic futures trading increasingly incorporates machine learning models that analyze vast datasets to predict price movements and optimize trade execution. Techniques include supervised learning for signal generation and reinforcement learning for adaptive strategy development.

Risk Management in Algorithmic Futures Trading

Effective risk management is paramount in algorithmic futures trading to protect capital and ensure sustainable performance. Automated systems integrate various controls to limit downside exposure and manage volatility.

Position Sizing and Leverage Control

Algorithms regulate trade size relative to account equity and market volatility, preventing excessive leverage that can amplify losses. Proper position sizing adapts dynamically to changing risk profiles.

Stop-Loss and Take-Profit Mechanisms

Predefined exit points are embedded within trading algorithms to automatically close positions when losses reach a threshold or profits hit target levels. This automation reduces emotional interference and preserves gains.

Real-Time Monitoring and Alerts

Continuous surveillance of algorithm performance and market conditions enables prompt intervention if anomalies or adverse scenarios arise. Alert systems notify traders of significant deviations or system malfunctions.

Diversification of Strategies and Instruments

Employing multiple algorithms and trading various futures contracts reduces correlation risk and smooths overall portfolio returns. Diversification is a key risk mitigation tactic in systematic trading.

Technological Infrastructure for Algorithmic Trading

The success of algorithmic futures trading heavily depends on robust technological infrastructure that supports data acquisition, processing, and trade execution.

High-Speed Market Data Feeds

Access to low-latency, high-quality market data is critical for timely decision-making. Data feeds must cover relevant futures exchanges and provide comprehensive order book and trade information.

Execution Platforms and APIs

Trading algorithms interact with brokerage execution platforms via application programming interfaces (APIs) that facilitate automated order

routing and management. Reliable and fast connectivity reduces slippage and execution risk.

Computing Power and Storage

Algorithmic trading requires substantial computational resources for data analysis, backtesting, and real-time processing. Cloud computing and dedicated servers are commonly utilized to meet these demands.

Security and Compliance

Robust cybersecurity measures protect trading systems from unauthorized access and data breaches. Compliance with regulatory requirements ensures ethical and legal operation within futures markets.

Key Technology Components

- Low-latency data and order transmission networks
- Advanced programming environments (e.g., Python, C++)
- Backtesting and simulation software
- Real-time monitoring dashboards
- Disaster recovery and fail-safe protocols

Frequently Asked Questions

What is algorithmic futures trading?

Algorithmic futures trading involves using computer algorithms to automatically execute trades in futures markets based on predefined criteria, aiming to optimize speed, accuracy, and profitability.

What are the benefits of using algorithms in futures trading?

Algorithms help eliminate emotional bias, increase trading speed, improve execution accuracy, enable backtesting of strategies, and allow for trading multiple futures contracts simultaneously.

Which programming languages are commonly used for developing algorithmic futures trading systems?

Python, C++, Java, and R are commonly used due to their strong libraries for data analysis, speed, and integration with trading platforms.

What risks are associated with algorithmic futures trading?

Risks include technical failures, overfitting strategies to historical data, sudden market changes causing unpredictable losses, and potential regulatory issues.

How can traders test the effectiveness of their algorithmic futures trading strategies?

Traders can use backtesting on historical market data, paper trading in simulated environments, and forward testing with small live accounts to evaluate and refine their algorithms before full deployment.

Additional Resources

1. *Algorithmic Trading: Winning Strategies and Their Rationale*

This book delves into the core principles behind algorithmic trading strategies, explaining how to develop, test, and implement them effectively in futures markets. It provides a comprehensive overview of quantitative trading techniques and risk management. Readers will gain insights into market microstructure and the rationale behind various algorithmic approaches.

2. *Advances in Financial Machine Learning*

Authored by a leading expert, this book explores cutting-edge machine learning methods applied to financial markets, including futures trading. It covers topics such as feature engineering, model validation, and the deployment of algorithms in live trading environments. The text is ideal for those seeking to integrate AI-driven techniques into algorithmic futures strategies.

3. *High-Frequency Trading: A Practical Guide to Algorithmic Strategies and Trading Systems*

This guide provides an in-depth look at high-frequency trading (HFT) systems with a focus on futures markets. It explains the infrastructure and technology needed to build low-latency trading algorithms. The book also discusses regulatory considerations and the risks involved with HFT.

4. *Quantitative Trading: How to Build Your Own Algorithmic Trading Business*

A practical handbook for aspiring quantitative traders, this book outlines the steps to create and operate an algorithmic trading business. It focuses

on futures markets, offering insights into data analysis, strategy development, and backtesting. Readers will learn how to navigate the challenges of automated trading and portfolio management.

5. Machine Trading: Deploying Computer Algorithms to Conquer the Markets

This book provides a comprehensive introduction to deploying machine learning algorithms in trading futures and other asset classes. It emphasizes practical implementation, including coding examples and strategy optimization. The author discusses how to handle real-world issues like slippage and transaction costs.

6. Algorithmic and High-Frequency Trading

Combining theoretical concepts with practical applications, this book explores the dynamics of algorithmic and high-frequency trading in futures markets. It covers statistical arbitrage, market making, and execution algorithms. The text also addresses challenges like market impact and latency.

7. Building Winning Algorithmic Trading Systems

This book focuses on the design, testing, and optimization of algorithmic trading systems tailored for futures markets. It offers detailed methodologies for strategy development and risk management. Readers will find case studies and examples that illustrate successful system deployment.

8. Trading Systems and Methods

A comprehensive reference for traders interested in systematic trading, this book covers a wide array of trading techniques applicable to futures. It includes detailed descriptions of technical indicators, pattern recognition, and quantitative models. The text serves as a valuable resource for developing robust algorithmic futures strategies.

9. Algorithmic Futures Trading: Strategies and Techniques for Automated Markets

This specialized book focuses exclusively on futures trading using algorithmic methods. It presents a variety of trading strategies, from trend following to mean reversion, with an emphasis on automation and execution. The author also discusses platform selection, backtesting frameworks, and performance evaluation.

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Davey, 2014-06-11 Develop your own trading system with practical guidance and expert advice In Building Algorithmic Trading Systems: A Trader's Journey From Data Mining to Monte Carlo Simulation to Live Training, award-winning trader Kevin Davey shares his secrets for developing trading systems that generate triple-digit returns. With both explanation and demonstration, Davey guides you step-by-step through the entire process of generating and validating an idea, setting entry and exit points, testing systems, and implementing them in live trading. You'll find concrete rules for increasing or decreasing allocation to a system, and rules for when to abandon one. The companion website includes Davey's own Monte Carlo simulator and other tools that will enable you to automate and test your own trading ideas. A purely discretionary approach to trading generally breaks down over the long haul. With market data and statistics easily available, traders are increasingly opting to employ an automated or algorithmic trading system—enough that algorithmic trades now account for the bulk of stock trading volume. Building Algorithmic Trading Systems teaches you how to develop your own systems with an eye toward market fluctuations and the impermanence of even the most effective algorithm. Learn the systems that generated triple-digit returns in the World Cup Trading Championship Develop an algorithmic approach for any trading idea using off-the-shelf software or popular platforms Test your new system using historical and current market data Mine market data for statistical tendencies that may form the basis of a new system Market patterns change, and so do system results. Past performance isn't a guarantee of future success, so the key is to continually develop new systems and adjust established systems in response to evolving statistical tendencies. For individual traders looking for the next leap forward, Building Algorithmic Trading Systems provides expert guidance and practical advice.

algorithmic futures trading: Algorithmic Trading IntroBooks Team, Algorithmic trading is an exchange mechanism where computers make choices about what to buy and sell in the money markets. The purpose of algorithmic trading would be to either make money by buying lower and selling higher or to minimize transaction costs by effectively buying or selling large volumes of financial commodities. Depending on those guidelines, the computer determines when and how much to buy and sell. And these norms are designed by manual efforts. Algorithmic Trading typically involves understanding of the financial marketing domain, programming, and knowledge related to data sciences. Algorithmic trading can be broken down into two segments: *The revelation of market inefficiencies: People are looking in the markets for something unfair that they can leverage. To illustrate, if two exchanges value a similar financial product differently, there may be a variance. *People devise a plan to exploit the business incompetence they have detected. It entails determining the ideal moment to buy and sell, the exact quantity to buy and sell, and how to end the trading operations.

algorithmic futures trading: Algorithmic Training, Future Markets, and Big Data for Finance Digitalization Raza, Hamad, Riaz, Ahsan, Riaz, Nimra, Ramakrishnan, Suresh, 2025-01-08 Algorithmic training, future markets, and big data are at the forefront of the digitalization revolution in finance, driving innovation and reshaping the industry's landscape. The integration of algorithms in financial decision-making enables faster, accurate predictions and automated processes, optimizing trading strategies and risk management. As financial markets evolve, future-oriented technologies, including artificial intelligence and machine learning, offer new areas for growth, with algorithms refining their effectiveness in response to real-time data. Big data provides vast amounts of information that can be analyzed to identify trends, enhance customer experiences, and inform investment strategies. Together, these elements transform finance into a more agile, data-driven system, increasing digitalization and creating new opportunities for growth, efficiency, and innovation. Algorithmic Training, Future Markets, and Big Data for Finance Digitalization explores the most current and transformative trends in the world of digital finance, from digital currencies to blockchain, fintech, financial inclusion and artificial intelligence. It offers a comprehensive analysis of how technology is revolutionizing financial services, products, and access for individuals and institutions alike. This book covers topics such as data science, financial technology, and machine learning, and is a useful resource for business owners, computer engineers, entrepreneurs,

economists, finance professionals, academicians, and researchers.

algorithmic futures trading: *Global Algorithmic Capital Markets* Walter Mattli, 2018-12-17 Global capital markets have undergone fundamental transformations in recent years and, as a result, have become extraordinarily complex and opaque. Trading space is no longer measured in minutes or seconds but in time units beyond human perception: milliseconds, microseconds, and even nanoseconds. Technological advances have thus scaled up imperceptible and previously irrelevant time differences into operationally manageable and enormously profitable business opportunities for those with the proper high-tech trading tools. These tools include the fastest private communication and trading lines, the most powerful computers and sophisticated algorithms capable of speedily analysing incoming news and trading data and determining optimal trading strategies in microseconds, as well as the possession of gigantic collections of historic and real-time market data. Fragmented capital markets are also becoming a rapidly growing reality in Europe and Asia, and are an established feature of U.S. trading. This raises urgent market governance issues that have largely been overlooked. *Global Algorithmic Capital Markets* seeks to understand how recent market transformations are affecting core public policy objectives such as investor protection and reduction of systemic risk, as well as fairness, efficiency, and transparency. The operation and health of capital markets affect all of us and have profound implications for equality and justice in society. This unique set of chapters by leading scholars, industry insiders, and regulators discusses ways to strengthen market governance for the benefit of society at whole.

algorithmic futures trading: *AI-Powered Hedge Funds: The Future of Algorithmic Trading and Investment Strategies* QuickTechie.com | A career growth machine, 2025-02-15 This book provides a comprehensive exploration of the transformative impact of Artificial Intelligence (AI) and Machine Learning (ML) on the hedge fund industry, as noted on QuickTechie.com. It details how traditional investment strategies are being revolutionized by advanced AI algorithms capable of analyzing extensive datasets, predicting market fluctuations, and optimizing trading decisions with remarkable speed and precision. The book examines the ways in which these AI-driven approaches are redefining the landscape, opening up new avenues for profit, and challenging established investment practices. *AI-Powered Hedge Funds* offers a deep dive into the core technologies, algorithms, and frameworks that empower hedge funds to achieve exceptional returns while effectively managing risk in an increasingly unpredictable market. Readers will gain valuable insights into the evolution of algorithmic trading and the proliferation of AI within hedge funds, echoing the innovations often discussed on QuickTechie.com. The book details how machine learning models are employed to forecast market trends and identify lucrative trading signals. Furthermore, the book explores the critical roles of quantitative finance, deep learning, and reinforcement learning in optimizing portfolio performance. Through detailed case studies, the author showcases successful AI-driven hedge funds and dissects their unique investment strategies, providing practical examples for implementation. In addition, it addresses crucial aspects of risk management and navigates the regulatory hurdles inherent in AI-based trading, preparing readers for the complexities of the field. The book culminates in a forward-looking perspective on the future of autonomous trading and the increasing role of AI in financial decision-making. It caters to a diverse audience, including hedge fund professionals, quantitative traders, data scientists, and fintech innovators. Whether the reader aims to develop AI-driven trading strategies or to simply understand how hedge funds are leveraging these cutting-edge technologies, *AI-Powered Hedge Funds* serves as a definitive guide to the next generation of investment, as potentially covered by resources like QuickTechie.com.

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social groups and algorithms in the construction of meaning and social interaction. The contributors highlight the performative dimensions of algorithms by exposing the dynamic processes through which algorithms – themselves the product of a specific approach to the world – frame reality, while at the same time organizing how people think about society. With contributions from leading experts from Media Studies, Social Studies of Science and Technology, Cultural and Media Sociology from Canada, France, Germany, UK and the USA, this volume presents cutting edge empirical and conceptual research that includes case studies on social media platforms, gaming, financial trading and mobile security infrastructures.

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algorithmic futures trading: High-performance Algorithmic Trading using Machine Learning Franck Bardol, 2025-06-30 DESCRIPTION Machine learning is not just an advantage; it is becoming standard practice among top-performing trading firms. As traditional strategies struggle to navigate noise, complexity, and speed, ML-powered systems extract alpha by identifying transient patterns beyond human reach. This shift is transforming how hedge funds, quant teams, and algorithmic platforms operate, and now, these same capabilities are available to advanced practitioners. This book is a practitioner's blueprint for building production-grade ML trading systems from scratch. It goes far beyond basic return-sign classification tasks, which often fail in live markets, and delivers field-tested techniques used inside elite quant desks. It covers everything from the fundamentals of systematic trading and ML's role in detecting patterns to data preparation, backtesting, and model lifecycle management using Python libraries. You will learn to implement supervised learning for advanced feature engineering and sophisticated ML models. You will also learn to use unsupervised learning for pattern detection, apply ultra-fast pattern matching to chartist strategies, and extract

crucial trading signals from unstructured news and financial reports. Finally, you will be able to implement anomaly detection and association rules for comprehensive insights. By the end of this book, you will be ready to design, test, and deploy intelligent trading strategies to institutional standards. **WHAT YOU WILL LEARN** ● Build end-to-end machine learning pipelines for trading systems. ● Apply unsupervised learning to detect anomalies and regime shifts. ● Extract alpha signals from financial text using modern NLP. ● Use AutoML to optimize features, models, and parameters. ● Design fast pattern detectors from signal processing techniques. ● Backtest event-driven strategies using professional-grade tools. ● Interpret ML results with clear visualizations and plots. **WHO THIS BOOK IS FOR** This book is for robo traders, algorithmic traders, hedge fund managers, portfolio managers, Python developers, engineers, and analysts who want to understand, master, and integrate machine learning into trading strategies. Readers should understand basic automated trading concepts and have some beginner experience writing Python code. **TABLE OF CONTENTS** 1. Algorithmic Trading and Machine Learning in a Nutshell 2. Data Feed, Backtests, and Forward Testing 3. Optimizing Trading Systems, Metrics, and Automated Reporting 4. Implement Trading Strategies 5. Supervised Learning for Trading Systems 6. Improving Model Capability with Features 7. Advanced Machine Learning Models for Trading 8. AutoML and Low-Code for Trading Strategies 9. Unsupervised Learning Methods for Trading 10. Unsupervised Learning with Pattern Matching 11. Trading Signals from Reports and News 12. Advanced Unsupervised Learning, Anomaly Detection, and Association Rules Appendix: APIs and Libraries for each chapter

algorithmic futures trading: The Ultimate Algorithmic Trading System Toolbox + Website George Pruitt, 2016-04-22 The accessible, beneficial guide to developing algorithmic trading solutions The Ultimate Algorithmic Trading System Toolbox is the complete package savvy investors have been looking for. An integration of explanation and tutorial, this guide takes you from utter novice to out-the-door trading solution as you learn the tools and techniques of the trade. You'll explore the broad spectrum of today's technological offerings, and use several to develop trading ideas using the provided source code and the author's own library, and get practical advice on popular software packages including TradeStation, TradersStudio, MultiCharts, Excel, and more. You'll stop making repetitive mistakes as you learn to recognize which paths you should not go down, and you'll discover that you don't need to be a programmer to take advantage of the latest technology. The companion website provides up-to-date TradeStation code, Excel spreadsheets, and instructional video, and gives you access to the author himself to help you interpret and implement the included algorithms. Algorithmic system trading isn't really all that new, but the technology that lets you program, evaluate, and implement trading ideas is rapidly evolving. This book helps you take advantage of these new capabilities to develop the trading solution you've been looking for. Exploit trading technology without a computer science degree Evaluate different trading systems' strengths and weaknesses Stop making the same trading mistakes over and over again Develop a complete trading solution using provided source code and libraries New technology has enabled the average trader to easily implement their ideas at very low cost, breathing new life into systems that were once not viable. If you're ready to take advantage of the new trading environment but don't know where to start, The Ultimate Algorithmic Trading System Toolbox will help you get on board quickly and easily.

algorithmic futures trading: High-Performance Algorithmic Trading Using AI Melick R. Baranasooriya, 2024-08-08 **DESCRIPTION** High-Performance Algorithmic Trading using AI is a comprehensive guide designed to empower both beginners and experienced professionals in the finance industry. This book equips you with the knowledge and tools to build sophisticated, high-performance trading systems. It starts with basics like data preprocessing, feature engineering, and ML. Then, it moves to advanced topics, such as strategy development, backtesting, platform integration using Python for financial modeling, and the implementation of AI models on trading platforms. Each chapter is crafted to equip readers with actionable skills, ranging from extracting insights from vast datasets to developing and optimizing trading algorithms using Python's extensive

libraries. It includes real-world case studies and advanced techniques like deep learning and reinforcement learning. The book wraps up with future trends, challenges, and opportunities in algorithmic trading. Become a proficient algorithmic trader capable of designing, developing, and deploying profitable trading systems. It not only provides theoretical knowledge but also emphasizes hands-on practice and real-world applications, ensuring you can confidently navigate and leverage AI in your trading strategies.

KEY FEATURES

- Master AI and ML techniques to enhance algorithmic trading strategies.
- Hands-on Python tutorials for developing and optimizing trading algorithms.
- Real-world case studies showcasing AI applications in diverse trading scenarios.

WHAT YOU WILL LEARN

- Develop AI-powered trading algorithms for enhanced decision-making and profitability.
- Utilize Python tools and libraries for financial modeling and analysis.
- Extract actionable insights from large datasets for informed trading decisions.
- Implement and optimize AI models within popular trading platforms.
- Apply risk management strategies to safeguard and optimize investments.
- Understand emerging technologies like quantum computing and blockchain in finance.

WHO THIS BOOK IS FOR This book is for financial professionals, analysts, traders, and tech enthusiasts with a basic understanding of finance and programming.

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algorithmic futures trading: Machine Learning and Modeling Techniques in Financial Data Science Chen, Haojun, 2025-01-22 The integration of machine learning and modeling in finance is transforming how data is analyzed, enabling more accurate predictions, risk assessments, and strategic planning. These advanced techniques empower financial professionals to uncover hidden patterns, automate complex processes, and enhance decision-making in volatile markets. As industries increasingly rely on data-driven insights, the adoption of these tools contributes to greater efficiency, reduced uncertainty, and competitive advantage. This technological shift not only drives innovation within financial sectors but also supports broader economic stability and growth by improving forecasting and mitigating risks. Machine Learning and Modeling Techniques in Financial Data Science provides an updated review and highlights recent theoretical advances and breakthroughs in professional practices within financial data science, exploring the strategic roles of machine learning and modeling techniques across various domains in finance. It offers a comprehensive collection that brings together a wealth of knowledge and experience. Covering topics such as algorithmic trading, financial technology (FinTech), and natural language processing (NLP), this book is an excellent resource for business professionals, leaders, policymakers, researchers, academicians, and more.

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financial institutions to seek efficiency gains by improving the quality of software systems, firms are devoting increasing amounts of financial and human capital to maintaining their competitive edge. This book is written to aid the management and development of IT systems for financial institutions. Although the book focuses on the securities industry, its solution framework can be applied to satisfy complex automation requirements within very different sectors of financial services – from payments and cash management, to insurance and securities. **Electronic and Algorithmic Trading: The Complete Guide** is geared toward all levels of technology, investment management and the financial service professionals responsible for developing and implementing cutting-edge technology. It outlines a complete framework for successfully building a software system that provides the functionalities required by the business model. It is revolutionary as the first guide to cover everything from the technologies to how to evaluate tools to best practices for IT management. - First book to address the hot topic of how systems can be designed to maximize the benefits of program and algorithmic trading - Outlines a complete framework for developing a software system that meets the needs of the firm's business model - Provides a robust system for making the build vs. buy decision based on business requirements

algorithmic futures trading: High Frequency Trading: Economic Necessity Or Threat to the Economy? Stefan Höppel, 2014-03-13 In the last four decades, technological progress led to an electrification of stock trading systems. It was realized that the profitability of trading strategies could be increased by employing computer algorithms to trade autonomously. This led to the implementation of High Frequency Trading (HFT). Theoretically HFT should increase efficiency in financial markets but it seems that, at least under certain circumstances, it causes market instability. The aim of this paper is to discuss the effect of HFT on market quality and why HFT cannot be fully explained by the neoclassical theory of economics. Therefore, the controversial positions in literature will be presented and discussed. It is especially referred to the influence of HFT on liquidity, price discovery and volatility. Primarily, its negative effect on volatility seems to contravene the modern finance. Furthermore, in the course of this work it will be illustrated that, by employing strict regulation of financial markets, this negative impact cannot be reduced to a sufficient extent in order for HFT to be characterized as market optimizing, according to the neoclassical theory of economics.

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Regulation; Capital Markets; Law & Economics, International Political Economy and or Mechanism Design (Applied Math, Operations Research, Computer Science or Finance).

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