NUS INVESTMENT SOCIETY

TRADING & ARTIFICIAL INTELLIGENCE

The information provided in this article is for informational purposes only and is based on publicly available data. It does not constitute financial or investment advice.

INTRODUCTION

The information provided in this article is for informational purposes only and is based on publicly available data. It does not constitute financial or investment advice.

NUS INVESTMENT SOCIETY

TRADING BEFORE AI

- Before computers, finance was a fully **manual system** with run on pen, paper.
- Trading floors and banks operated through **human networks**, physical ledgers, and face-to-face communication.
- Data updates required hours of clerical work.
- Historically, bankers and traders relied on:
  - Ledgers, quills, and ink to physically perform accounting at the Bank of England
  - Clerks and brokerage runners with armies of assistants updating and cross-checking transactions nightly
  - Coffee houses, telegraphs, and letters as a form of key communication hubs before electronic exchanges
  - Board boys & blackboards were used to trade manually, written and erased throughout the day

Source: The Conversation (2021)

The information provided in this article is for informational purposes only and is based on publicly available data. It does not constitute financial or investment advice.

Trading in the Human Centric Era

The information provided in this article is for informational purposes only and is based on publicly available data. It does not constitute financial or investment advice.

NUS INVESTMENT SOCIETY

LIMITATIONS IN THE HUMAN ERA OF TRADING

Without technology, it raises concerns such as:

- **Slow information flow**
  - News and prices transmitted by mail or telegraph, creating large latency gaps
  - Retail investors often traded on outdated ticker-tape prices
- **Lack of technology usage**
  - Transactions verified via signatures and ledgers, instead of databases
  - Traders relied on institutional reputation (e.g. Bank of England clerks) to ensure accuracy
- **Prone to inefficiency & bias**
  - Errors in transcription were common
  - Emotional reactions (panic, rumor) often moved markets faster than fact

Risks:

Arbitrage first emerged as traders exploited information delays between London, New York, and provincial markets

"**Record of bad bargains**" pertained brokers manipulated handwritten price lists to justify poor trades

Physical distance led to pricing inefficiency, as telegraph users had early advantage
Fire, fraud, and riots were as dangerous as market risk

Source: Bloomberg

The information provided in this article is for informational purposes only and is based on publicly available data. It does not constitute financial or investment advice.

AI REVOLUTION IN TRADING

NUS INVESTMENT SOCIETY

AI REVOLUTION IN TRADING

The birth of AI (1950s-1960s): Foundational work like Alan Turing's 1950 paper Computing Machinery and Intelligence introduced the "Turing Test", laying the conceptual groundwork for what machines might do. While this era was mostly academic, it signalled the long-term vision of machine intelligence.

Early integration in infrastructure (1970s-1990s): Before full-blown AI models, early algorithmic systems (for example, the CATS trading system at the Toronto Stock Exchange in 1977) began automating tasks like order matching and price-setting.

Source: Toronto Stock Exchange, Toronto, 1981 – © Avard Woolaver

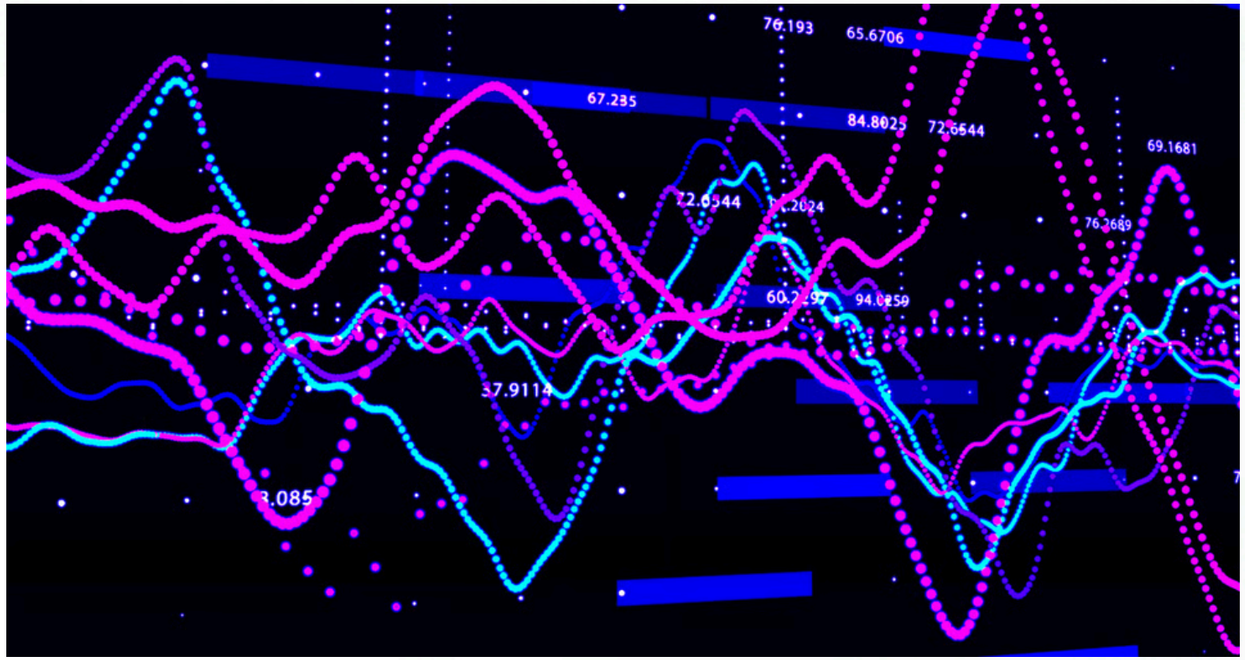
The information provided in this article is for informational purposes only and is based on publicly available data. It does not constitute financial or investment advice.

NUS INVESTMENT SOCIETY

AI REVOLUTION IN TRADING

Rise of algorithmic and AI-driven trading (2000s-2010s): By around 2010, estimates suggest that 60-70% of equity trades in developed markets are now algorithmically executed an enormous shift from manual trading.

The LLM (Large language models)/ unstructured-data era (2020s-present): AI is now capable of ingesting and acting on unstructured data (news-feeds, social media, earnings transcripts). As this happens, the tools available to traders expand far beyond price & volume alone.



Source: Powers J., BuiltIn (2025)

The information provided in this article is for informational purposes only and is based on publicly available data. It does not constitute financial or investment advice.

AI'S EFFECT ON TRADING

NUS INVESTMENT SOCIETY

AI'S EFFECT ON TRADING

According to a study in Data Horizon in 2025...

- **Sentiment analysis:**
  - AI systems now monitor large volumes of textual data (news, social media, central-bank statements) and extract sentiment or event signals much faster than human reading could allow
- **Earnings-call summarisation and unstructured data:**
  - Automated summarisation allows trading desks to act on management commentary or surprise disclosures quicker than ever.
- **Event detection:**
  - AI models can flag non-price, non-volume events (e.g., supply-chain disruption, satellite imagery) and integrate them into trading strategies.
- **Operational scale and cost saving:**
  - The global algorithmic/AI-in-trading systems market is large and growing: for example the "algorithmic trading software market" is projected to reach around US$32.7 billion by 2033, with ~70-80% of equity trading volume in developed markets executed via algorithms.

The information provided in this article is for informational purposes only and is based on publicly available data. It does not constitute financial or investment advice.

CASE STUDIES

NUS INVESTMENT SOCIETY

CASE STUDIES

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

GRAND VIEW RESEARCH

INTERNATIONAL MONETARY FUND

- According to the **LSE article** by **Maximilian Goehmann** and **Benzinga**, it estimates suggest 60-70% of trades in major equity markets are now algorithmically executed.
- The global market for “AI in Trading” is projected to grow from about US$18.2 billion in 2023 to US$50.4 billion by 2033, implying strong adoption and investment.
- The algorithmic trading market (which includes ML & AI integration) is growing at ~12-13% CAGR from 2025–2030 according to GrandView research.
- The IMF highlights that generative AI (GenAI) is likely to raise the speed of market reaction through processing unstructured data (e.g., central bank announcements) in real real-time.

The information provided in this article is for informational purposes only and is based on publicly available data. It does not constitute financial or investment advice.

NUS INVESTMENT SOCIETY

CASE STUDIES

J.P.Morgan

In 2024:

- JPMorgan integrated AI to enhance operational efficiency, customer experience, and data-driven decision-making.
- It treaded data as an asset, using AI to analyze patterns, forecast trends, and optimize investments.

Its uses primarily consisted of:

- **IndexGPT**: AI-driven investment advisory tool using GPT-4 + Natural Language Processing (NLP) to create thematic investment portfolios based on trends. Demonstrates AI's role in personalized, accessible financial planning for retail clients.
- **COIN (Contract Intelligence)**: Automates review of legal documents, reducing 360,000 hours of manual work with near-zero error. Shows AI's potential in compliance, accuracy, and cost reduction.

The information provided in this article is for informational purposes only and is based on publicly available data. It does not constitute financial or investment advice.

NUS INVESTMENT SOCIETY

CASE STUDIES

J.P.Morgan

Its uses primarily consisted of (cont'd):

- **LOXM**: AI system that optimizes global trade execution using past trade data to maximize speed and price efficiency. Enhances market performance and client satisfaction in investment banking.
- **LLM Suite**: Generative AI assistant (developed with OpenAI) for employees to draft emails, summarize reports, and solve analytical tasks. Illustrates internal AI adoption for productivity and workflow automation while safeguarding proprietary data.
- **OmniAI Platform**: In-house AI/ML infrastructure that standardizes deployment, supports data scientists, and ensures secure, scalable AI use. Shows how banks build AI ecosystems to deploy models efficiently and safely.

AI in Banking: Automates complex manual processes, enhances personalization, strenthens risk management and compliance.

The information provided in this article is for informational purposes only and is based on publicly available data. It does not constitute financial or investment advice.

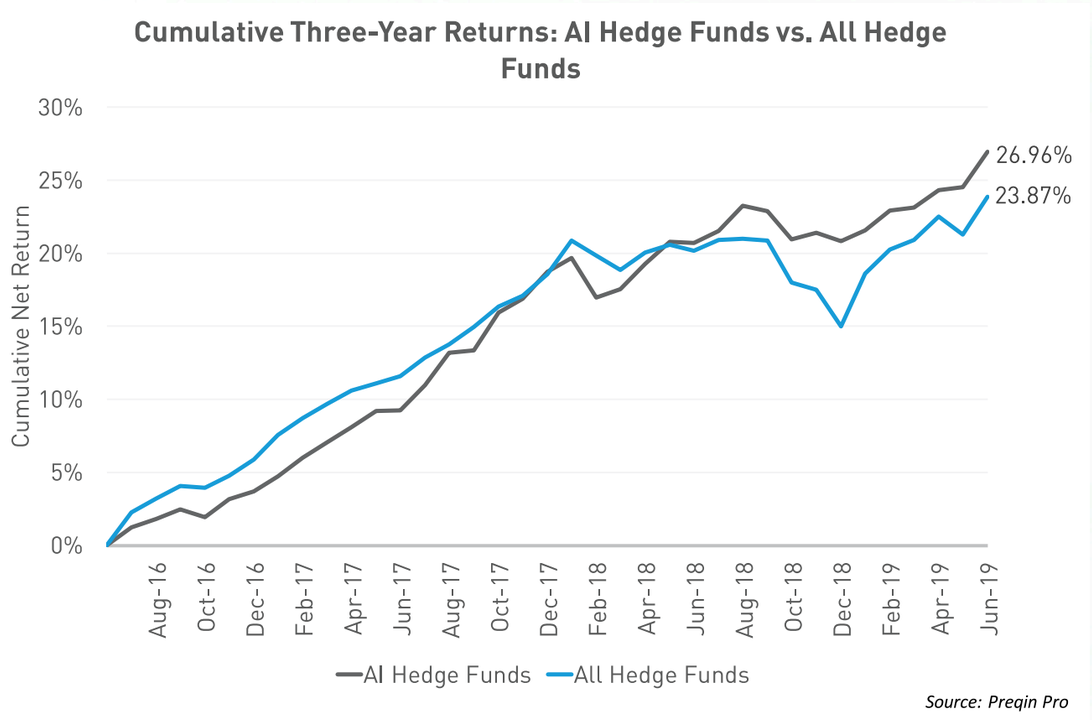
INVESTMENT PERSPECTIVE

NUS INVESTMENT SOCIETY

HOW AI CONTRIBUTES TO HIGHER PROFITABILITY

- A Stanford study found that an AI analyst using only public information outperformed 93% of mutual fund managers over 30 years, generating ~600% higher alpha than human counterparts.

- According to 2024 reports from Deloitte and the SEC, AI-driven hedge funds outperformed traditional funds by up to 25%, highlighting AI's role in boosting profits and managing risk.



SOURCE: PREQIN (2024), "AI-POWERED HEDGE FUNDS OUTPERFORM TRADITIONAL COUNTERPARTS."

The information provided in this article is for informational purposes only and is based on publicly available data. It does not constitute financial or investment advice.

NUS INVESTMENT SOCIETY

SO DOES AI = HIGHER PROFITABILITY?

> **"AI STRUGGLES WITH RARE EVENTS, EMOTIONS, AND CONTEXT — HUMAN OVERSIGHT REMAINS VITAL."**
> (STANDFORD BUSINESS 2025)

- Not necessarily. While AI trading can enhance speed, precision, and short-term gains, it doesn't guarantee higher long-term profitability — results depend on data quality, market conditions, and human oversight.
- In strong bullish/uptrend markets, human-managed funds outperformed AI-driven funds, showing human discretionary judgment can add value when momentum is high.
- Takeaway: **AI enhances efficiency, not guaranteed profitability** — success still depends on strategy, timing, and market conditions..

The information provided in this article is for informational purposes only and is based on publicly available data. It does not constitute financial or investment advice.

CONCLUSION

NUS INVESTMENT SOCIETY

CONCLUSION

- AI transformed trading from manual decision-making to data-driven precision.
- Automation boosts efficiency, but not every algorithm guarantees profit.
- Human judgment remains essential for interpreting context and emotion.
- The future of finance lies in AI–human collaboration, not competition.

The information provided in this article is for informational purposes only and is based on publicly available data. It does not constitute financial or investment advice.