

Index

2297 NYSE 134
 3D (three-dimensional) 129-135, 137, 139, 145-149, 154
 2D (two-dimensional) 129-130, 132-133, 136, 146, 356
 3D visualization 133
 3D world 133

A

ABS - See Automated Bond System.
 Accelerated Processing Unit (APU) 290
 actionable information 250
 ActiveTrader 165
 Algorithmic Trading (AT) 55
 Algorithmic Trading Model
 Implementation Shortfall Algorithm 61
 Time Algorithm 61, 72
 Volume Participation Algorithm 61
 Almon PDL Polynomial Distributed Lags 308
 Altman's Z-score 371
 American Stock Exchange (ASE) - See Global Financial Markets.
 Application Programming Interface (API) 162
 Arbitrage Strategy
 Covered Interest Arbitrage 56-57, 69-71
 Exchange Arbitrage 56
 Information Arbitrage 56, 59, 72
 Statistical Arbitrage 56, 58-59, 70
 Triangular Arbitrage 57-58, 69-70
 Arizona Financial Text System (AZFinText) 97
 auralization 132
 Automated Bond System (ABS) 4
 Autoregressive Conditional Heteroscedasticity (ARCH) 306

B

Backus Naur Form (BNF) 40-42
 balkanizing 77

bank failure 340, 369, 381
 Basel II Accord 347
 bills 215
 Black-Scholes model 145
 bonds 215
 Bridges of Konigsberg 326
 Buttonwood Agreement 2

C

Capital Asset Pricing Model (CAPM) 105, 134
 CDOs - See Collateralized Debt Obligations
 CEV - See Constant Elasticity of Variance model.
 CGE - See Computable General Equilibrium.
 closeness 102
 cloud supercomputing - See Virtual Reality in Finance.
 Cointegration Approach 59
 Collateralized Debt Obligations (CDOs) 13
 common stocks 215
 competitive analysis 263
 Computable General Equilibrium (CGE) 198
 Constant Elasticity of Variance model (CEV) 143
 Consumer Stock Ownership Plans (CSOPs) 227
 Corporate bankruptcy 369, 371, 381
 Covered Interest Arbitrage - See Arbitrage Strategy.
 Covered Interest Parity (CIP) 56-57, 69, 71-72

D

Data Collection and Integration
 crawling 252
 entity consolidation 252-253, 262
 indexing 254
 integrated data 250
 datamart construction 242
 data warehousing 240, 242, 252, 254-255, 262-263
 daytrading - See Ubiquitous Trading.
 Designated Order Turnaround system 4, 7, 11-13, 31, 207, 286

diffusion histograms - See Virtual Reality in Finance.
 directional accuracy 102, 110, 112-113, 115-122, 124-125
 Direct Market Access (DMA) 62
 DOT - See Designated Order Turnaround system.
 DSP Chips 285-286, 288-289, 311, 323, 351
 Dynamic Data Exchange (DDE) 162

E

EDDIE 7 39, 41-42, 46-51
 EDDIE 8 39, 41-42, 46-51
 Efficient Market Hypothesis (EMH) 98
 Electronic Communication Networks (ECNs) 75
 EMH - See Efficient Market Hypothesis.
 entropy 48-49, 64-66, 71-72, 341, 343, 365
 Equilibrium Price Distribution 327
 Evolving Decision Rules (EDR) 371
 Exchange Arbitrage - See Arbitrage Strategy.
 Execution System (ES) 161
 Extract, Transform and Load Approach (ETL) 242

F

fair value model 9
 Federal Reserve Bank (FRB) 213
 FGH Umbrella Model 286-287, 291, 293, 299, 302
 Field Programmable Gate Arrays (FPGAs) 288
 figures comparison 264
 Filter (FLR) 54, 104, 141, 145, 296, 298, 313, 317
 financial ecosystem 239, 241, 244, 247, 249
 Financial Information Exchange protocol (FIX) 62
 Fisher Arithmetic Lags 307
 Flash Crash 14, 16
 flow-of-funds 187, 189-190, 322-323, 330-332, 336-337, 351, 357, 362-363
 FPGA - See Field Programmable Gate Arrays.
 FPGA Monte Carlo simulation 328
 fraud detection 264
 FRB - See Federal Reserve Bank.

G

Gaia 62, 64
 Genetic Decision Tree (GDT) 40
 Genetic Programming Algorithms (GP Algorithms) 37-39, 47, 50
 Global Financial Markets
 American Stock Exchange (ASE) 2
 New York Stock Exchange (NYSE) 2
 North American Securities Dealers (NASD) 3
 Securities and Exchange Commission (SEC) 22

Global Industry Classification Standard (GICS) 103
 GLS - See Guided Local Search.
 Graphical Processing Units (GPUs) 288
 Graph of Possible Transactions (GOPT) 324, 327
 Group Method for Data Handling (GMDH) 305
 Guided Local Search (GLS) 370

H

haptics 131-132, 155-156
 Hardware Description Languages (HDL) 360
 HDL - See Hardware Description Languages.
 heuristic trading 160
 High Frequency Traders (HFTs) 14
 households
 Middle Class 206
 Poor Class 205
 Rich Class 205
 human capital 220

I

implied volatility surfaces - See Virtual Reality in Finance.
 Information and Communication Technologies (ICT) 1
 Information Arbitrage - See Arbitrage Strategy.
 institutional traders 26, 30, 78
 Internationalised Resource Identifiers (IRIs) 244
 International Trade Network (ITN) 339

J

Java 168
 Jorgenson Rational Lags 308

K

Koyck Geometric Lags 307

L

Lambert, Drexel Burnham 5
 large cap and middle cap traders 26, 78
 Leveraged Buyouts (LBOs) 5
 linked data 239-241, 244, 247, 249-254, 262-266, 268-269
 Long-Run Test 48
 Long Term Capital Management (LTCM) 10
 long-term investors 25-26, 78
 Lotka-Volterra Predator-Prey Model 305

Index

M

MACs (multiply-accumulate commands) 287
Market Fraction Hypothesis (MFH) 37-39, 42, 45-46, 50-52
market maker 16, 80
Mean Squared Error (MSE) 102
micro-day traders 25, 27-28, 78, 90
microprocessors (MPUs) 288
Middle Class - See households.
Milken, Michael 5
Modern Portfolio Theory (MPT) 8
Momentum (Mom) 6, 16, 27, 54, 70, 105-107, 110, 114, 122-128, 162, 172
Momentum Moving Average (MomMA) 54
Morgan Stanley 7-9, 103
Moving Average (MA) 10, 41, 52, 54, 94, 127, 143, 155, 158-159, 162, 172, 233, 235, 283-284, 296, 298-299, 310, 313-314, 317, 382
MSE - See Mean Squared Error.
Multi-Population EDR 372, 374
mutation mechanisms 372

N

NAICS - See North American Industry Classification System.
NASD - See North American Securities Dealers.
New York Stock Exchange (NYSE) - See Global Financial Markets.
North American Industry Classification System (NAICS) 103
North American Securities Dealers (NASD) - See Global Financial Markets.
NYSE - See New York Stock Exchange.

O

object oriented programming 200
Online Brokerage 167
order process flow 76, 80, 85, 93
over-trading - See Ubiquitous Trading.

P

pattern day traders 25, 78
penalization of similarity 372
penny stock and small cap traders 25, 78
PES - See Planning and execution Systems
Philosophy of Models
 bridge principals 197
 internal principals 197

Planning and Execution Systems (PES) 161, 167
Planning Systems (PS) 161, 166
Poor Class - See households.
premature convergence 44, 372

Q

quant 97, 104, 109, 113, 122, 127
quants 1-2, 8-9, 11, 13, 96, 18, 104, 110, 122-123

R

random immigration schemes 372
Random Walk Theory (RWT) 99
Rate of Correctness 40
Rate of Failure 40
Rate of Missing Chances 40
redundant condition 374
Resource Description Framework (RDF) 244
Rich Class - See households.
RightEdge 172
RWT - See Random Walk Theory.

S

SCTs - Shareholder Constituency Trusts (SCTs)
SEC Regulation 76, 90
Securities and Exchange Commission (SEC) - See Global Financial Markets.
selection schemes 372
Self-Organizing Maps (SOM) 38
semantic web 70, 239-244, 247, 252-255, 258, 263, 265-269
Sequential Minimal Optimization (SMO) 102
Shareholder Constituency Trusts (SCTs) 211
Short-Run Test 46
SIC - See Standard Industrial Classification
simulated trading 102, 110, 112-113, 115-125
SMO - See Sequential Minimal Optimization
SOM - See Self-Organizing Maps.
sound cards 131
speed of calculations 344
Standard Industrial Classification (SIC) 103
Statistical Arbitrage - See Arbitrage Strategy.
Stochastic spread approach 59
Stock Market Crash of 1987 6
stop order 160
supermontage 80, 84
Support Vector Machines (SVM) 101
surround sound 131
swing traders 25-26, 34, 78, 90

System of National Accounts (SNA) 322, 331, 336, 368
 systems reliability and security 76

T

tactile feedback - See haptics.
 targeting niche markets 76-77
 TBR - See Trade Break Out.
 three-dimensional - See 3D.
 tracking devices 132
 Trade Break Out (TBR) - See Ubiquitous Trading.
 trader interactions - See Virtual Reality in Finance.
 Trader Workstation Software (TWS) 168
 Tradesignal Standard Edition 173
 TradeStation 174
 Triangular Arbitrage - See Arbitrage Strategy.
 two-dimensional - See 2D.

U

Ubiquitous Trading
 daytrading 27, 31, 34, 36, 78
 over-trading 21
 Trade Break Out (TBR) 54

Universal Resource Identifiers 244

V

vacuous condition 374
 value at risk (VaR) 2
 virtual reality 129-137, 141, 143, 145, 148, 151, 153-156
 Virtual Reality in Finance
 cloud supercomputing 130
 diffusion histograms 134-135, 148-149
 implied volatility surfaces 133-135, 138, 143, 154
 trader interactions 135
 virtual trading 8, 272
 visualization 132
 volatility (risk) 137
 Volatility (VIX) 1-2, 6, 10, 12-15, 17-18, 20, 31, 34, 41, 54, 66, 68, 106, 132-148, 153-156, 186, 218, 278, 311, 338, 344-345