

Yogesh Malhotra, PhD, MSCS, MSNCS, MSQF, MS-Acc, MBA, CEng, CISSP, CISA, CEH, AWS-CCP, AWS-CSAA

Who's Who in America®, Who's Who in the World®, Who's Who in Finance & Industry®, Who's Who in Science & Engineering®
US Citizen | New Hartford, NY | 646-770-7993 | Dr.Yogesh.Malhotra@gmail.com | YogeshMalhotra.com/bio.html | <https://linkedin.com/in/yogeshmalhotra>

We Create the Digital Future™. You Can Too! Let's Show You How! AIMLExchange.com: BRINT.com: C4I-Cyber.com

AWS Partner-Cloud Computing, Artificial Intelligence, Machine Learning, Data Science, Cybersecurity Engineering Chief Information Officer, Chief Technology Officer, Head of AI-ML-Data Science-Cyber-Crypto-Quantum Computing

Digital CEO-CTO-CIO-CISO Practices Pioneer Global Impact: Industry Benchmarks, Interviews, Keynotes, Editorial Reviews

"The new business model of the Information Age, however, is marked by fundamental, not incremental, change. Businesses can't plan long-term; instead, they must shift to a more flexible anticipation-of-surprise model." – **CIO Magazine** Interview

"The very essence of what various IT systems can do in the context of KM begins and ends with people and processes. In absence of motivation and commitment on the part of the users, such systems cannot function." – **CIO Insight** Interview

"Yogesh Malhotra says his vision is to fill the gaps between business and technology, data and knowledge, and, theory and practice..." – **Fortune** Magazine Interview

"Obsolete what you know before others obsolete it and profit by creating the challenges and opportunities others haven't even thought about..." – **Inc.** Technology Magazine Interview [Adopted by **US DoD Under-Secretary** and **DISA** among others.]

"Knowledge Management refers to the critical issues of organizational adaptation, survival and competence against discontinuous environmental change. Essentially it embodies organizational processes that seek synergistic combination of data and information processing capacity of information technologies, and the creative and innovative capacity of human beings." –

The Wall Street Journal Interview

"Malhotra says that synergy of 'smart minds' and 'smart technologies' provides a basis for defining agile and adaptable supply chain networks that can withstand the challenges of radically changing business environments." – **Institute for Supply Management** Interview

Amazon AWS Accredited-Certified Partner leading New York State, US, and Global CIO Vision, Leadership, and, Strategic and Operational Executions and New York State (NYS) IT Administration and Networks Administration CIO Practices. Top-3 DoDD IT-Security certifications CISSP, CISA, and CEH with track-record of demonstrated ability to work with culturally diverse populations. NYS CIO-CISO Practices leadership at NYS Governor's annual NYS Cybersecurity Conference since 2016 while Deputy CIO-CISO leading IT Administration and Networks Administration for NYS Top-Digital Government Administration. AWS Certified Cloud Practitioner and AWS Certified Solutions Architect Associate leading IT, Networks, IT Security, and Security Governance CIO-CTO Cloud Computing Practices. Air Force Research Lab Ventures building-leading Hi-Tech CIO practices developing C4I-Cyber, AI, and Quantum Computing strategy, policy, and deployment guidance for the Pentagon Joint Chiefs. Invited interviews for the USAF Chief Scientist, Pentagon top US Air Force (USAF) Science role while serving on USAF Pentagon C4I-ISR CTO-DoD CIO Senior Advisor Team for DoD-wide AI-ML Deployment with USAF Secretary as client. Prior to that retained by GIBC Digital CEO from largest hedge fund to build and head a Billion-dollar AI Innovation Data Center for the Government of Bahamas. Before that as CIO-CTO advisory expert to global CEO-CIO-CTO team building global Blockchain-Cloud Computing platform, represented the CEO on global investment road shows across Asia and Australia. Prior to that, MIT Management and Leadership industry expert for AI Strategy Road Maps Execution for a thousand industry executives with direct supervision and performance assessment oversight of 200 executives from global firms such as Google, Microsoft, Tesla and Silicon Valley CEOs-CIOs-CTOs. Before that in NYS Deputy CIO-CISO role led Senior IT and Networks Administration leadership team for 250 IT staff serving county's 1,000 users with 100,000 constituents building-leading corporate systems and enterprise IT security ensuring integrity, confidentiality and availability. Before that led and advised teams of Managing Directors for Wall Street hedge funds with \$1 Trillion AUM including JP Morgan Private Bank and a Goldman Sachs Alumnus firm. Over two-decade track record of building, and, leading worldwide CEO-CIO-CTO Leadership, IT Vision and Strategy, Business-IT Alignment, Enterprise Information Security, Enterprise Application Systems, Digital Disruption-Innovation and R&D CIO practices with global CIO industry impact interviews such as by CIO Magazine, CIO Insight, Fortune, Inc., and, Wall Street Journal. Silicon Valley-Wall Street-Pentagon-Global direct clients have included world-leading Big-4, consulting and hi-tech firms such as Accenture founding partners, McKinsey Silicon Valley Partners, Google, IBM, Intel, Microsoft, BT (UK), Philips (Netherlands); global network members such as Goldman Sachs with our Digital CEO-CIO practices recommended by industry leaders such as Microsoft founder Bill Gates, PwC Vice-Chairman and CKO Ellen Knapp, and CIOs of US Army, Navy, Air Force, Marine Corps; and the National Science Foundation, the United Nations, and, U.S. [on invitation of the Veterans Administration] and world governments and economies such as Switzerland, Netherlands, Mexico, and, S. Korea. Top-10 IT-Quant-AI PhD, CIO Digital Transformation of UPMC.

AWS Partner-Cloud Computing, Artificial Intelligence, Machine Learning, Data Science, Cybersecurity Engineering

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|--|---------------------------------------|---------------------------------------|
| ▪ AWS Partner Machine Learning on AWS | ▪ AWS Apache-Kafka, Hadoop-HDFS | ▪ AWS Partner Containers on AWS |
| ▪ AWS Partner Data Analytics Solutions | ▪ AWS Authoring Visual Analytics | ▪ AWS Big Data and Analytics |
| ▪ AWS Building Data Lakes-Data Warehouses | ▪ AWS Partner SAP DBMS on AWS | ▪ AWS Partner VMware DBMS on AWS |
| ▪ AWS Partner IoT on AWS | ▪ AWS Partner Security Best Practices | ▪ AWS for Microsoft Workloads |
| ▪ Migrating Your Application to AWS | ▪ AWS Building a Contact Center | ▪ AWS Partner Cloud Economics |
| ▪ Advanced DBMS Migrating to AWS | ▪ AWS Security Governance at Scale | ▪ AWS Designing Blockchain Solutions |
| ▪ AWS Data Engineering Building Data Lakes | ▪ Advanced AWS Well-Architected | ▪ AWS Cloud Amazon SageMaker AI-ML-DL |

DIGITAL CEO-CIO-CTO: SILICON VALLEY-WALL STREET-PENTAGON-NSF-US-UN-WORLD: DIGITAL R&D PRACTICES-VENTURES LEADER

- Founder: First-Foremost-Largest Global Digital Network: Pitched for \$Billion Funding as Silicon Valley VCs-CEOs Thought-leader.
- *CIO Magazine* Digital Transformation Pioneer: Founder, *Computerworld* Top Digital Site-Search Engine-Social Network.
- Digital Transformation-AI-Cyber-Crypto-Quantum Pioneer Keynotes-Interviews: *CIO*, *Fortune*, *Inc.*, *The Wall Street Journal*...
- AI-ML-DL, Quant-Cyber-Crypto-Quantum, Block Chain-Cloud Computing Networks, Practices, Technologies, Teams, Ventures
- Founder-CEO: Global Risk Management Network LLC, AWS Partner-Boards & CEOs Post AI-Quantum Cloud Computing Leader.
- Global Clients: Accenture HQ Partners, Google, IBM, Intel, BT, McKinsey Silicon Valley Partners, TIE Silicon Valley, Harvard,...
- Largest Digital Transformation Network: Millions of Users: *Computerworld* Top Digital Site-Search Engine-Social Networks.
- Recommended by Microsoft Founder-CEO, PwC Vice Chairman-Chief Knowledge Officer, DoD-CIOs, Harvard, MIT, Stanford.
- Air Force Research Lab: AIMLExchange™-BRINT®-C4I-Cyber™: Digital Transformation-AI-ML-C4I-Cyber-Quantum Ventures.
- USAF-Pentagon CTO Teams Chief Scientist: DoD AI-ML Enablement USAF Secretary-JAIC CTO: Founder & CEO: MVP: AIMLExchange™.
- GIBC Digital Managing Director: Top Executive Leadership Team: Top Leadership Head, \$Billion AI-ML-Cyber-Crypto Center.
- AI-ML Advisor: Ethereum Block Chain-Cloud Computing Pioneer CEO-CxOs: Global Road Shows: Asia, Australia: Representing CEO.
- New York State CISO Role-IT Security Head: Top Digitized Government Administration: IT Administration-Networks Administration.
- \$Trillion Wall Street Hedge Funds: JP Morgan Global Head of Analytics & US Head of Portfolio Management Teams Leader.
- CIO Digital Transformation: UPMC-Pitt PhD PI: Digital Social Networks: Management Controls-Risk Management-Quant Models.
- Global CIO Strategy-Software Teams Leader: Global Big-3 IT & Big-3 Banking & Financial Systems: USA, Hong Kong, India.

DIGITAL PRACTICES PIONEER-LEADER: SILICON VALLEY VCs-CEOs to \$TRILLION WALL STREET HEDGE FUNDS to PENTAGON JOINT CHIEFS

- Artificial Intelligence Pioneer: World's Top KM Site Founder to USAF-AFRL AIMLExchange: \$60M Acquisition Offer from \$2B Firm.
- AWS Accredited-Certified Partner CCP-CSAA Leading Silicon Valley-Wall Street-Pentagon-Global Boards-CEOs Practices
- AWS Partner Leading AI-Cyber-Crypto-Quantum Cloud Practices: AI-Machine Learning, CI/CD, Containers, IoT, Network Engineering.
- Silicon Valley-Wall Street-Pentagon Digital CEOs AI-ML-DL-Cyber-Crypto-Quantum-Blockchain-Risk-Computing Leadership.
- 2023 *Forth.*: *International Journal Of Knowledge Eng. & Management* Quantum Risks: ISO 31000 Risk Management Standard Execution.
- 2023: *Journal of Financial & Insurance Management*: C4I-Cyber Beyond ABMS-JADC2: AFRL Ventures Building CNY-Quantum Valley.
- 2022: *IUP Journal of Financial Risk Management* CreditMetrics Methodology and Credit Value at Risk (Credit VaR).
- 2022: *IUP Journal of Financial Risk Management* Beyond 'Bayesian vs. VaR' Dilemma to Empirical Model Risk Management.
- 2022 NYS Cybersecurity Conference: Boards-CEOs Cloud Computing: MLOps, DevSecOps and Infrastructure as Code (IaC).
- 2021 NYS Cybersecurity Conference: Pentagon Joint Chiefs ABMS-JADC2: Why C4I-Cyber Supremacy > AI-Quantum Supremacy.
- 2019 NYS Cybersecurity Conference: Why Smart Minds Using Smart Tools Are Critical for AI-ML-Quantum Computing Success.
- 2019 *Journal of Financial Transformation* Model Risk Management for Minimizing Downside Risks of AI and Machine Learning.
- 2018 AFCEA-AFRL C4I and Cyber Conference: Model Risk Management in Operationalizing AI-ML for Algorithm Deployment.
- 2018 MIT Computer Science & AI Lab Faculty-SME: AI, Machine Learning, Deep Learning, NLP, RPA, Robotics Executive Guide.
- 2018 Princeton University: Beyond Deep Learning & GANs: Model Risk Management in AI, Machine Learning & Deep Learning.
- 2018 *Journal of Operational Risk* Bridging Networks-Systems-Control Frameworks for Cybersecurity Curricula-Standards Development.
- 2017 *IUP Journal of Computer Science* Quant Modeling Trust Management Protocols in Next-Gen Wireless Mobile Ad-Hoc Networks.
- 2016 NYS Cybersecurity Conference: Cyber-Finance: Cybersecurity Risk Analytics Beyond Predictive to Anticipatory Analytics.
- 2016 Princeton University: Beyond Model Risk Management to Model Risk Arbitrage for FinTech Era: Risk, Uncertainty & Profit Beyond ZIRP.
- 2015 Princeton University: Future of Finance Beyond 'Flash Boys': Risk Models for Managing Uncertainty in Non-Deterministic Cyber World.
- DoDD 8570/8140 Top-3 IT Security Certifications CISSP-CISA-CEH; Chartered Engineer-Life Member, The Institution of Engineers CEng.
- National Science Foundation SME: 32 Cyber-Computer Sc. Expert Panels. United Nations SME: National Digital-KM Assets Quant Economist.

MIT-PRINCETON-KELLOGG-CARNEGIE MELLON FACULTY: DIGITAL-SOCIOTECHNICAL R&D IMPACT AMONG AI-QUANT FINANCE NOBEL LAUREATES

- 28-Year Post-PhD Digital-AI-Cyber-Crypto Innovation R&D Practices: Digital Pioneer Starting with Beta of First WWW Browser.
- Executive Education Faculty-AI Faculty-SME Industry Expert: MIT, Princeton University, Carnegie Mellon University, Kellogg*.
- Post-Doctoral Engineering R&D: SSRN 101 Top-10 R&D Rankings-Top 1% Author: AI-ML-Cyber-Crypto-Quantum-Computing.
- 50+ Editorial-Scientific-Journals-Boards: STEM AI-ML-DL-Cyber-Crypto-Quantum-Quant Finance & Trading-Risk Computing.
- Engineering-IT-Cloud Security Certifications: C.Eng. (1989-), CISSP (2005-), CISA (2007-), CEH (2014-), AWS CCP-CSAA (2022-).
- Professor: SUNY STEM Computer Science-Network Security, Syracuse University IT-Operations Research-Quant Methods MBA.
- Built SUNY Offensive-Defensive Cybersecurity, Penetration Testing-Ethical Hacking Program Leading to NYS State Accreditation.
- Top 10 IT-PhD AI-Quant: University of Pittsburgh: Full Scholarship-Research Fellowship: Top-10 IS-IT Strategy Founder-Pioneer.
- R&D Pioneer: AI, Digital Transformation, GII-NII-Telecom-Infrastructures, Chaos Engineering-Self Adaptive Complex Systems.
- Executive Education: Engineering: University of California Berkeley Haas School of Business, Kellogg School of Management*.
- Global Finance, Insurance & Risk Management Associations Expert: CFA-NAIC-PRMIA Financial Eng.-Quant Risk Models.
- 5 STEM-Engineering-Quantitative Masters Degrees: Outstanding Student Awards-Top Ranks-Perfect GPA-Full Scholarship:
- MS Network & Computer Security, SUNY Outstanding Student Award, Highest GPA: SUNY Polytechnic Institute, Top-Rank Hacker.
- MS Computer Science: SUNY Polytechnic Institute: AI-Machine Learning-Quantum Computing-Cybersecurity-Cryptography.
- MS Quantitative Finance: Fordham University: \$Trillion Wall Street Hedge Funds Quant Trading-Risk Modeling Leaderships.
- MS Accountancy, SUNY Polytechnic Institute: SUNY Perfect GPA Award, Business School Top Rank, Model Risk Management.
- MBA: UNLV: Operations Research 110%, Accountancy 110%, Advanced Statistics, Econometrics: Perfect GPA - Phi Kappa Phi Honors.

CAREER HIGHLIGHTS: US & GLOBAL CEOs-CTOs DIGITAL TRANSFORMATION R&D PRACTICES-VENTURES LEADER-PIONEER

Amazon.com AWS Partner: AWS Accredited-Certified Partner, New Hartford, NY, USA - Global-Worldwide **2022-Present**
AWS Accredited-Certified Partner: Silicon Valley-Wall Street-Pentagon-Global Boards-CEOs Practices-Ventures Leader
Boards-CEOs Guide: MLOps, DevSecOps, Infrastructure as Code: AI-ML-Network-Security-Engineering CI/CD Pipelines
Post AI-Quantum Defense & Space Pentagon Joint Chiefs ABMS-JADC2, \$ Trillion Wall Street Hedge Funds Practices
Post AI-Quantum Machine Learning-Network Engineering Practices Advancing Upon 30-Year AI-Cyber Resilience Leadership
AWS Cloud Computing Technical Certifications: Certified Solutions Architect Associate: Certified Cloud Practitioner

Air Force Research Laboratory (USAF-AFRL) Commercialization Academy Ventures, Rome, New York, USA **2018-Present**
US AFRL Commercialization Academy AI-Quant-Cyber-Crypto-Quantum Digital CEO-CxO Ventures Founder
NYS: Pentagon Joint Chiefs Guidance: ABMS-JADC2: C4I-Cyber-Crypto-EMS Supremacy: ABMS2-JADAC2-JADCAC2
Chief Scientist Pentagon USAF C4I-ISR CTO Team: Korn Ferry USAF Chief Scientist Pentagon Invited Interviews
Silicon Valley's Next Big Thing™: CEO Know-Build-Monetize™ Networks: AI-ML-Quant-Cyber-Crypto-Quantum Computing
CEO: AIMLExchange™ Accelerating Innovation: Saving CEOs 90% Time & Cost: AI-Cyber-Crypto-Quantum-Cloud Computing
CEO: C4I-Cyber™ C2-EMS-Risk-Resilience-Sustainability Engineering: AI-ML-DL-Cyber-Crypto-Quantum-Cloud Computing
MIT Computer Science & AI Lab-Sloan School of Management: AI-Machine Learning-Deep Learning-NLP-Robotics Faculty-SME
Princeton University Operations Research & Financial Engineering: AI-Quant-Cyber-Crypto-Quantum Computing SME
IBM Quantum Excellence Certificate: Quantum Uncertainty-Time Space Complexity and Knowledge Management Pioneer
NIST Risk Management Certificate: AI-Cyber-Crypto-Risk Management Pioneer: **30-Year Lead on ISO 31000 RM Standard**
New York State: CISO-State Governor's Cybersecurity Conferences SME: Top Digitized Government: IT-Networks Admin-CISO
DoDD 8140 Top-3 IT Infra-Security-Pen Testing Certifications: CISSP (2005-Current), CISA (2007-Current), CEH (2014-Current)
Chartered Engineer-Life Member: Institution of Engineers: CEng (1989-Current), Certified Computing Professional (1993-Current)
STEM Computer Science 50+ Scientific Editorial-Review Boards AI-Machine Learning-Cyber-Crypto-Quantum-Risk Computing

Global Risk Management Network LLC: World's Top Digital Site-Search Engine-Social Network, New York, USA **1993-Present**
Marquis Who's Who® in: the World®, America®, Finance & Industry®, Science & Engineering®: Since 1999
Chairman-CEO-CIO-CTO-CISO: Silicon Valley-Wall Street-Pentagon-Global Digital CEOs & Boards Advisor-Thought Leader
Silicon Valley-Wall Street-Pentagon-Global Digital CEOs-CxOs Networks: AI-ML -Cyber-Crypto-Quantum-Computing Pioneer
- Computerworld Top Digital Transformation Site-Search Engine-Social Network: Millions of Worldwide Users
- Clients: Accenture HQ Partners-Founders, McKinsey Silicon Valley Partners, Google, IBM, Intel, BT (UK), Harvard, etc.
- Recommended by Microsoft Founder-CEO, PwC Vice Chairman-CKO, DoD-US Air Force-Army-Navy-Marine Corps CIOs, etc.
AWS Accredited-Certified Partner: Silicon Valley-Wall Street-Pentagon-Global Boards & CEOs Cloud Computing Practices
USAF Chief Scientist Pentagon Invited Interviews: Pentagon Joint Chiefs AI-Quantum Uncertainty Time-Space Complexity SME
USAF Pentagon C4I-ISR CTO Team: Chief Scientist-Chief Data Scientist: DoD-wide AI-ML Execution: USAF Secretary-JAIC CTO
US AFRL Commercialization Academy AI-Quant-Cyber-Crypto-Quantum Digital CEO-CxO Ventures Founder & CEO
NYS Boards-CEOs Post AI-Quantum Cloud Computing Pioneer: AWS AI-ML-Cyber-Crypto-Quantum Computing Pioneer
Professor-Executive Education Faculty-SME: MIT, Princeton, Kellogg, Carnegie Mellon, Syracuse University, Eastern Europe
CEOs-CxOs Advisor: Silicon Valley VCs-CEOs, \$Trillion Wall Street Hedge Funds, Pentagon Joint Chiefs, US-Global CxO Teams
CEOs-CTOs-CxOs Mentor: Global Venture Capital & Private Equity: Silicon Valley-Wall Street-Pentagon-Global Organizations
Managing Director, GIBC Digital, New York: \$Billion Global AI-Cyber-Crypto-Cloud Excellence Center, Bahamas Government
Chief AI-ML-Crypto Architect, Iagon, Norway: Global Blockchain-Crypto-Cloud Computing Platform, Asia-Australia Roadshows
National Science Foundation: 32 National Expert Panels: Multi-Million \$ SBIR/STTR: US Web-Computing & Cybersecurity
United Nations World HQ: Global Expert Panel: National Knowledge Societies: Quantitative Methods, Models, Measures
Government of Switzerland: National Banking & Finance Transformation: FinTech Algorithms SME: Goldman Sachs Bankers
\$Trillion Wall Street Hedge Funds: JP Morgan Private Bank-Goldman Sachs Alumnus Firm: MDs-Quants Teams Leader
Syracuse University: IT-Operations Research-Decision Sciences-Quant Methods Faculty: Promotion to Associate Professor
McKinsey Silicon Valley Partners: Digital Transformation Pioneer Thought Leader: Global Management Consulting Intranets
Arthur Andersen Consulting Partners World HQ: Knowledge Management Pioneer Thought Leader: KM Beyond Best Practices
South Korea Vision Korea Campaign: National Vision Korea Campaign Thought Leader: National KM-Digital Transformation
Government of Mexico: G8 National e-Government Vision Thought Leader: Parliament-Cabinet, 13 CIOs, 600 Executives
Government of Netherlands: National Digital Transformation Thought Leader: Parliament-Cabinet: Education-Culture
Veterans Administration: US Federal Government Council Partner: US Fed Agencies-wide Best Practices-KM Thought Leader
University of Pittsburgh Medical Center-CIO: Artificial Intelligence-Self Adaptive Complex Systems-Structural Models Pioneer
University of Pittsburgh Top-10 PhD Fellowship & Scholarship: Artificial Intelligence-Telecom-GII-NII R&D-Practices Pioneer

Global Big 3-Banking & Big-3 IT Firms CIO Strategy & Execution: Software Projects-Teams Leader **1987-1993**
Bank of America Merger, Las Vegas, USA; Banque Indo-Suez, Hong Kong; Tata Group, India

India's Largest Car Manufacturer & Quality Revolution Leader, Suzuki-Maruti, Gurgaon-Delhi, India **1984-1987**
Executive Engineer EDP-MIS, Process Eng. & Production Eng.: India-Japan Technology Transfer Enterprise Leader

Professional Roles & Responsibilities

Including Full-Time, Part-Time, Consulting & Advisory, and Venture Capital-Private Equity CEO-CTO Mentor Roles

Recent Korn Ferry Invited Interviews for US Air Force Top Science Role of USAF Chief Scientist Pentagon

While Being Pitched Wall Street Hedge Fund \$3 Million Annual Base Salary for Head of AI-ML Role.

Prior Most Recent Full-Time Engagement – GIBC Digital LLC Managing Director –\$350K Annual Base Salary

While Being Pitched Wall Street Hedge Fund \$1 Million Annual Base Salary for Head of AI-ML Role.

Most Recent Hourly Advisory Role with Equity – Global Blockchain-Crypto-Cloud Pioneer – \$10K per hour, 90% in Equity.

Multiple Venture Capital-Private Equity Firms CEO-CIO-CTO Mentor-Advisory Roles – Diverse Equity Participations.

GLOBAL RISK MANAGEMENT NETWORK, LLC, Utica-Rome, NY, USA

1993 – Current

AMAZON-AWS NETWORK PARTNER, New Hartford, NY, USA

2022 – Current

AIR FORCE RESEARCH LAB COMMERCIALIZATION ACADEMY VENTURES, Rome, NY

2018 – Current

Silicon Valley-Wall Street-Pentagon CEO-CIO-CTO Digital Transformation Networks: AIMLExchange™: BRINT™: C4I-Cyber™

World's Largest Digital Transformation Networks: Digital CEO-CIO-CTO Practices, Technologies, Ventures, Teams & Networks.

Computerworld Top Digital Site-Search Engine-Social Network: World's First-Foremost-Largest Digital Transformation Networks.

Founded as Global e-Learning Networks Ranked and Recognized Among Top Leadership Programs such as Harvard and Wharton.

Silicon Valley-Wall Street-Pentagon Digital Pioneer: Clients: Accenture, BT, Google, HP, IBM, Intel, McKinsey, Microsoft, Ogilvy, PwC,...

US-World Governments Digital Visionary-Leader: US Federal Government, Netherlands, Switzerland, Korea, Mexico...

Worldwide editorial reviews and interviews as global industry benchmark: Wall Street Journal, CIO Magazine, Fortune, Inc....

Ziff Davis Global Standard of Internet Commerce: Founding Member-Editor: US CEOs-CIOs-CTOs Digital Standards Leader.

Millions of Worldwide Users, 130,000+ Opt-in Contributing Members, 200 PhD Industry Experts: Sample of Clients & Patrons:

Global Corporations: Goldman Sachs, Google, HP, IBM, Intel, Microsoft, Ogilvy

Consulting Firms: Accenture, Ernst & Young, McKinsey, PricewaterhouseCoopers (PwC)

World Governments: Australia, Brazil, Canada, China, European Union, UK, USA

U.S. Defense: AFRL, Air Force, Army, CCRP, Comptroller, DISA, DoD, NASA, Navy

World Defense: Australia (Air Force), Canada (Defence R&D), UK (Ministry of Defence)

Healthcare: WHO, US Health and Human Services, UK Dept. of Health, European HMA

Universities: Harvard, INSEAD, MIT, Princeton, Stanford, UC Berkeley, Wharton

Associations: AACSB, ABA, ACM, AICPA, AOM, APICS, ASTD, ISACA, IEEE, INFORMS

Industry Leadership: CFA, Conference Board, Institute for Supply Management, PRMIA

VENTURE CAPITAL & PRIVATE EQUITY BOARDS-CEO-CXO TEAMS MENTOR, NYS-US-Global

2020 – Current

Global Risk Management Network LLC: VigiTrust – Ireland, FasterCapital – Dubai, Newchip, GLG – USA...

USAF-PENTAGON CTO CEO-CIO Teams: AFRL-Venture MVP AIMLExchange™, AER POTENTIA, Global Virtual 2019 – 2023

Chief Scientist & Chief Data Scientist: CEO-CIO Teams: Founder & CEO: AFRL-Venture MVP: AIMLExchange™

IAGON, Hamar, Norway; Kuala Lumpur, Malaysia; Sydney, Australia, Central New York, Global Virtual 2018 – 2018

CEO-CIO-CTO-COO Team – AI-ML Advisor, Represented CEO on Global Road Shows for Investors-Major Funds

GIBC DIGITAL LLC, Brooklyn, NY, Bahamas, Central New York, Global Virtual

2018 – 2018

Managing Director – Retained by CEO to Head \$1 Billion Global AI-Machine Learning Center of Excellence

MIT COMPUTER SCIENCE & AI LAB, MIT SLOAN SCHOOL OF MANAGEMENT, Boston, MA, Global Virtual

2017 – 2018

CEO-CIO-CTO Management & Leadership Advisor: Led 200 Management & Leadership Executives in AI Execution

NAIC NATIONAL EXPERT ON CYBER RISK INSURANCE MODELING, New York, NY, National Virtual

2016 – 2017

CEO-CIO-CTO Cyber Insurance Practices: National Association of Insurance Commissioners: Expert Paper

AMERICU: FINANCIAL SERVICES MARKETING INTELLIGENCE ANALYTICS, Yorkville, NY

2017 – 2017

Executing CEO Vision of Amazon-Like Analytics CDO Role: Retained by CIO & Vice-President Marketing

STATE OF NEW YORK CISO: IT ADMINISTRATION & NETWORKS ADMINISTRATION, Bath, NY

2016 – 2017

Deputy to the CIO Role: CISO Role: Steuben County: IT Administration & Networks Administration

STATE UNIVERSITY OF NEW YORK SUNY: PROFESSOR: NETWORK ADMINISTRATORS, Corning, NY

2015 – 2016

STEM Computer Science Assistant Professor, Cyber Security, DevOps, Analytics, Tenure-Track

KELLOGG SCHOOL OF MANAGEMENT, Evanston, IL & SUNY POLYTECHNIC INSTITUTE, Utica, NY

2012 – 2015

Post-Doctoral R&D: PRMIA Quant Finance Risk Modeling: MS Computer Sc.: MS Network & Computer Security

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| JP MORGAN PRIVATE BANK & GOLDMAN SACHS ALUMNUS FIRM, Midtown Manhattan, NY Wall Street Hedge Funds with \$1 Trillion AUM: Led Teams of Managing Directors, PMs, Quants | 2012 – 2012 |
| FORDHAM UNIVERSITY, New York City, NY & WALL STREET INVESTMENT BANKS, New York City, NY Post-Doctoral R&D: MS Quantitative Finance: JP Morgan Private Bank & Goldman Sachs Alumnus Firm | 2011 – 2012 |
| UNIVERSITY OF CALIFORNIA, BERKELEY, Berkeley, CA & SUNY POLYTECHNIC INSTITUTE, Utica, NY Post-Doctoral R&D: MFE Financial Engineering Executive Education: MS Accountancy: Top GPA Award | 2009 – 2011 |
| SYRACUSE UNIVERSITY: PROFESSOR: IT & OPERATIONS RESEARCH MBA FACULTY, Syracuse, NY Associate Professor (Promoted, 2008), IT & Operations Research (OR) MBA Faculties, Tenure-Track | 2001 – 2009 |
| FLORIDA ATLANTIC UNIVERSITY: PROFESSOR: IT & OPERATIONS RESEARCH, Ft. Lauderdale, FL Assistant Professor, IT-Operations Research MBA & Executive MBA Faculties, Tenure-Track | 1998 – 2001 |
| UNIVERSITY OF PITTSBURGH MEDICAL CENTER (UPMC) CIO DIGITAL TRANSFORMATION, Pittsburgh, PA Pitt-UPMC CIO Digital Transformation: Process Management-Change Management-Business Strategy | 1993 – 1998 |
| GLOBAL BIG-3 IT & BIG-3 BANKING CIO STRATEGY & EXECUTION: GLOBAL FINANCIAL SYSTEMS Bank of America Merger (Las Vegas, NV), Banque Indo-Suez (Hong Kong), Unisys (Atlanta, GA), TATA (India) | 1987 – 1993 |
| SUZUKI MOTOR CORPORATION: MARUTI SUZUKI INDIA LTD., Gurgaon, India Executive (Information Systems): Team Lead Financial Systems; Executive Engineer (Process Engineering) | 1984 – 1987 |

Digital CEO-CIO-CTO Leadership-Publications-Books, Scientific-Editorial Expert Panels, Certifications

As **12-Yr Full-Time Tenure-Track Information Technology and Computer Science Professor** of Business-Technology Managers, Computer Scientists, and, Network Administrators, supervised and mentored more than 2,500 students and over 500 student teams with mentored Teaching and Research Assistants placed in leadership roles spanning Silicon Valley, Wall Street, and Global-Worldwide firms and organizations. As Founder of world's first, foremost and largest **Digital Transformation Networks with millions of worldwide users**, global digital community of more than 130,000 opt-in network contributors, and, a team of over 200 PhD industry experts, pioneered **US, Global and Worldwide Digital CEO-CIO-CTO-CISO practices** followed and adopted by worldwide institutions and organizations.

CEO-CIO-CTO-CISO practices R&D impact ranked and recognized among Nobel Laureates such as Black-Scholes and Herbert Simon in AACSB and ASIS&T R&D impact studies. **CNet Networks Corporate Computing Award** for Most Influential Research in **Why Knowledge Management Systems Fail. Top-3 Knowledge Management Scholars & Practitioners** Rank in Drexel University Global Survey of the ISWorld IS community. Served on **National Science Foundation** 32 National Expert Panels of Computer Scientists for allocating multi-million-dollar **SBIR/STTR** grants for US Cyber-Computing and Cybersecurity innovations. Scientific editorial-review IT-Quant Methods panels of more than 50 journals-conferences such as **ACM & IEEE** in AI-Machine Learning-Deep Learning-NLP, Cybersecurity, Cryptography, Actuarial Science, Operations Research, Quant Finance & Trading, Risk Management, Econometrics, IT, and, MIS. **Academy of Management's Best Reviewer Award** in **IT Innovation Quant Methods-Models**.

Books-Papers-Presentations [Amazon Author](#) | [SSRN Author](#) | [Google Scholar](#)

Amazon Author Page: 2 Published Books: <https://www.amazon.com/stores/author/B001K80G96/about> .

SSRN Research Network: https://ssrn.com/author_id=2338267 101 Top-10 R&D Ranks; Over 13,000 Downloads

Google Scholar: <https://scholar.google.com/citations?user=MGbIsfkAAAAJ> Over 10,000 Citations

Knowledge Management & Virtual Organizations Pioneer: [Malhotra, Yogesh, Knowledge Management and Virtual Organizations, Idea Group Publishing, April 1, 2000.](#)

Amazon: <https://www.amazon.com/Knowledge-Management-Virtual-Organizations-Malhotra/dp/187828973X> .

"In his latest book, Knowledge Management and Virtual Organisations, KM luminary, Dr. Yogesh Malhotra, offers some cautionary advice. He exposes three myths often associated with KM solutions." – **Microsoft**

Knowledge Management & [Digital] Business Model Innovation Pioneer: [Malhotra, Yogesh, Knowledge Management and Business Model Innovation, Idea Group Publishing, April 1, 2001.](#)

Google: https://books.google.ca/books/about/Knowledge_Management_and_Business_Model.html?id=nAccO2bjrxwC .

"Knowledge Management and Business Model Innovation brings together the latest thinking on issues at the forefront of teaching innovation and professional imagination."

- **M. Lynne Markus, Professor and Department Chair of Electronic Business, City University of Hong Kong**

ACADEMIC-FACULTY QUALIFICATIONS

- **Post-Doc AI-ML-Quant-Cyber-Crypto-Quantum-Risk Computing R&D, MIT Computer Science & AI Lab and Princeton Bendheim Center of Finance Faculty-SME.**
- **Carnegie Mellon University and Kellogg School of Management Digital Transformation & Knowledge Management Pioneer Executive Education Faculty**
- **Syracuse University – Promotion to Associate Professor coincided with AACSB Impact Research Report Recognition of R&D Impact Among Nobel Laureates such as Quant-Finance Scholars Black-Scholes, Harry Markowitz and William Sharpe; State University of New York and State University System of Florida Tenure-Track R&D Faculty**
- **Top-10 IT PhD: Quantitative Methods: AI-ML-KM-HCI-GII-NII-Telecom-Risk Management-Models, 3.9/4.0, Beta Gamma Sigma Honors, Full Scholarship, University of Pittsburgh, Pitt, Pittsburgh, PA.**
- **Top-10 IT PhD Research fellowship** with Top-10 founder of Information Systems and IT Strategy pioneer, Pitt University Professor William R. King.
- **MS Network & Computer Security, Blockchains, Cryptography-Cryptanalytics, 1st, 3.97/4.0, SUNY Polytechnic Institute, College of Engineering, Utica, NY, SUNY Outstanding Student Award, Top Ranked Penetration Tester & Ethical Hacker.**
- **MS Computer Science, Algorithms, Cryptography, Information Assurance, 3.7/4.0, SUNY Polytechnic Institute, College of Engineering, Utica, NY.**
- **MS Quantitative Finance: Credit Risk, Liquidity Risk, Market Risk, Portfolio Risk, Interest Rates, Derivatives, Options-Futures, 3.7/4.0, Fordham University, Gabelli School of Business, New York, NY.**
- **MS Accountancy, Model Risk Management, 1st, 4.0/4.0, SUNY Polytechnic Institute, College of Business, Utica, NY, SUNY Perfect GPA Award.**
- **MBA, Advanced Econometrics & Statistics, and, Optimization, 1st, 4.0/4.0, Beta Gamma Sigma and Phi Kappa Phi Honors, Full Scholarship, University of Nevada Las Vegas, College of Business, Las Vegas, NV.**

EXECUTIVE EDUCATION

- **University of California Berkeley, Haas School of Business, Financial Engineering** (Statistical Physics & Applied Math).
- **Kellogg School of Management Professional Risk Managers' International Association (PRMIA): Quantitative Risk Management** (Statistical Physics & Applied Math).

ENG.-IT-SECURITY-FINANCE-CLOUD CERTIFICATIONS

- **AWS CSAA** Certified Solutions Architect – Associate
- **AWS CCP** Certified Cloud Practitioner
- **CISSP** Certified Information Systems Security Professional
- **CISA** Certified Information Systems Auditor
- **CEH** Certified Ethical Hacker
- **CCP/CDP** Certified Computing Professional / Certified Data Professional
- **CEng** Chartered Engineer and Life Member of the Institutions of Engineers
- **SAP/ERP** Enterprise Resource Planning Faculty Certification, SAP University Alliance
- **SAP/CRM** Customer Relationship Management Faculty Certification, SAP University Alliance
- **CPA Education** Fulfilled by **AICPA New York State Education: New York State MS Accountancy in Financial Accounting & Auditing**, State University of New York.
- **Kaufmann Foundation** University Entrepreneurship Faculty Certification.

**AWS Partner AI-MLOps-DevSecOps-Infrastructure As Code – MIT-Princeton AI-ML-Cyber-Crypto-Quantum Computing
ASIS&T R&D Impact Recognized Among AI Nobel Laureates: Herbert Simon: MIT-Princeton-Pentagon-NYS-AFRL-AFCEA**

MIT Computer Science & AI Lab Faculty-SME: Artificial Intelligence, Machine Learning, Deep Learning, NLP, RPA, Robotics

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| <ul style="list-style-type: none"> ▪ AWS Partner AI-Cyber Boards-CEOs SME ▪ Pentagon Joint Chiefs: AI-Quantum SME ▪ GIBC MD: \$Billion AI Excellence Ctr. ▪ Blockchain-Crypto CEO Team AI Advisor ▪ MIT AI Faculty-SME AI-ML-DL-NLP-RPA ▪ Princeton Faculty-SME AI-ML-DL-GAN ▪ New York State SME AI-ML-DL-GAN | <ul style="list-style-type: none"> ▪ Python Quants AI-Algorithmic Trading ▪ SSRN 101 Top 10 R&D Rankings ▪ R&D Impact Among AI Nobel Laureates ▪ Top-3 AI-KM Scholars-Practitioners ▪ AI Self-Adaptive Complex Systems R&D ▪ Meaning-Aware AI: Top Ranked Paper ▪ AI-Cybersecurity Faculty-Industry SME | <ul style="list-style-type: none"> ▪ Hedge Funds-VC-PE CXOs AI SME ▪ AI Chaos & Complexity Eng. SME ▪ AI Time-Space Complexity SME ▪ AI Quantum Uncertainty SME ▪ AI Quantum Minds SME ▪ AI-Quantum MLOps DevSecops IaC ▪ Adversarial-Counteradversarial C2 |
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AWS Partner: AI-ML-Cyber-Crypto-Quantum-Data Science-Data Analytics-DBMS-Data Lakes Practices Leader

As Listed in LinkedIn Profile Certifications Also Accessible Herein: <https://yogeshmalhotra.com/AWSPartnerCertificates.pdf>

- **AWS Accredited-Certified Partner AWS Certified Solutions Architect – Associate**
- **AWS Accredited-Certified Partner AWS Certified Cloud Practitioner**
- **AWS Builders Quest Gold Level AWS WWCS Solution Architect**
- AWS Partner: Building Streaming Data Analytics Solutions on AWS (Technical)
- AWS Partner: Building Batch Data Analytics Solutions on AWS (Technical)
- AWS Partner: Building Streaming Data Analytics Solutions on AWS (Technical)
- AWS Partner: Building Batch Data Analytics Solutions on AWS (Technical)
- AWS Partner Containers on AWS (Technical)
- AWS Partner Machine Learning on AWS (Technical)
- AWS Partner Machine Learning on AWS (Technical)
- AWS Partner Building Data Analytics Solutions using Amazon Redshift (Technical)
- AI-assisted Code Companion Workshop 2022: Amazon CodeWhisperer: ESEC/FSE '22, NUS, Singapore
- AWS Resilience Hub Building Application Resiliency & Reliability Solutions-Focused Immersion Day
- AWS Security and Compliance Getting Started with AWS Security Services Solutions-Focused Immersion Day
- AWS Cloud Operations Immersion Day Getting Started with AWS Cloud Operations
- Better Together: How AWS Analytics and Machine Learning Toolsets are Coming Together for a Unified Experience
- AWS ML Builders Day Amazon SageMaker, ML Models, and MLOps
- Amazon CloudFront Edge Services Solutions-Focused Immersion Day
- Disaster Recovery Strategies on AWS Solutions-Focused Immersion Day
- Getting Started with Control Tower Solutions-Focused Immersion Day
- Introduction to Identity and Access Management Solutions-Focused Immersion Day
- Modernize your Data Warehouse using Amazon Redshift Solutions-Focused Immersion Day
- AWS Partner Building Data Lakes on AWS (Technical)
- AWS Partner Machine Learning on AWS (Technical)
- AWS Partner Machine Learning on AWS (Technical)
- AWS Partner Building Data Analytics Solutions using Amazon Redshift (Technical)
- AWS Partner IoT on AWS (Technical)
- AWS Partner Migrating Your Application to AWS (Technical)
- AWS Partner Advanced Migrating to AWS (Technical)
- AWS Partner Data Analytics on AWS (Technical)
- AWS Data Engineering Building a Data Lake on AWS Solutions-Focused Immersion Day
- AWS IoT Jumping into AWS IoT Greengrass V2 Components Solutions-Focused Immersion Day
- AWS Partner Sales Accreditation (Business)
- AWS Serverless Getting Started with Serverless Solutions-Focused Immersion Day
- AWS Partner Building Data Analytics Solutions using Amazon Redshift (Technical)
- AWS Authoring Visual Analytics using Amazon QuickSight
- AWS Partner Building Data Lakes on AWS (Technical)
- AWS Partner Building Data Analytics Solutions using Amazon Redshift (Technical)
- Amazon Web Services Cloud Best Practices (AWS)
- AWS Partner SAP on AWS (Business)
- AWS Partner SAP on AWS (Technical)

- AWS Partner Security Best Practices (Technical)
- AWS Partner Security Best Practices (Technical)
- AWS Partner Advanced AWS Well-Architected
- AWS Professional Services Big Data and Analytics
- AWS Partner Building Data Lakes on AWS (Technical)
- AWS Partner Machine Learning on AWS (Technical)
- AWS Professional Services Security Best Practices
- AWS Partner Migrating Your Application to AWS (Technical)
- AWS Professional Services Building a Contact Center using AWS
- AWS Partner Security Governance at Scale (Business)
- **AWS Well-Architected Proficient**
- AWS Partner Advanced AWS Well-Architected
- AWS Partner Migrating to AWS (Technical)
- AWS Partner Advanced Migrating to AWS (Technical)
- AWS Partner Containers on AWS (Technical)
- AWS Partner Containers on AWS (Technical)
- AWS Partner Data Analytics on AWS (Technical)
- AWS Partner IoT on AWS (Technical)
- AWS Professional Services Operational Integration Best Practices
- AWS Partner Data Analytics on AWS (Business)
- AWS Partner Foundations for Public Sector (Business)
- AWS Partner Machine Learning on AWS (Business)
- AWS Partner Machine Learning on AWS (Technical)
- AWS Partner Machine Learning on AWS (Technical)
- **AWS Partner Migration Ambassador Foundations (Business)**
- AWS Partner Migration Business Case Development (Business)
- AWS Partner Security Governance at Scale (Technical)
- AWS Partner Security Governance at Scale (Technical)
- AWS Partner Security Governance at Scale (Technical)
- AWS Partner Security Governance at Scale (Business)
- AWS Partner VMware Cloud on AWS (Technical)
- AWS Professional Services Big Data and Analytics
- AWS Professional Services Building a Contact Center using AWS
- AWS Professional Services Cloud Advisory
- **Migration Ambassador Foundations (Business)**
- AWS Partner Well-Architected Best Practices (Technical)
- AWS Professional Services Cloud Adoption Framework
- AWS Partner Advanced Migrating to AWS (Technical)
- AWS Partner Migrating Your Application to AWS (Technical)
- AWS Partner Migrating to AWS (Technical)
- AWS Partner AWS for Microsoft Workloads (Technical)
- AWS Partner Building Data Lakes on AWS (Technical)
- AWS Partner Containers on AWS (Technical)
- AWS Partner Data Analytics on AWS (Technical)
- AWS Partner IoT on AWS (Technical)
- AWS Professional Services Security Best Practices
- **AWS Partner Accreditation (Business)**
- **AWS Partner Accreditation (Business)**
- **AWS Partner Accreditation (Cloud Economics)**
- **AWS Partner Accreditation (Technical)**
- AWS Partner Building Your Business with AWS for Executives
- **AWS Partner Accreditation (Business)**
- **AWS Partner Accreditation (Technical)**
- **AWS Partner Cloud Economics Accreditation**

- Amazon AWS Designing Blockchain Solutions using Amazon Managed Blockchain
- Amazon AWS Cloud Amazon SageMaker for AI-ML-DL
- AWS Cloud Machine Learning Basics Professional Training
- AWS Cloud Practitioner Essentials Day for US Federal Government
- AWS Cloud Technical Essentials Day for Government
- Amazon AWS Cloud Amazon SageMaker for AI-ML-DL
- Amazon AWS Cloud Data Analytics Fundamentals on AWS
- Amazon AWS Cloud Introduction to Blockchain and Amazon Managed Blockchain
- Amazon AWS Cloud Machine Learning Basics
- Amazon AWS Cloud Strategies and Tools to Perform Large-Scale Migrations
- Amazon AWS Securing Your Cloud: AWS Cloud Security
- Azure Cloud Virtual Training Day DevOps with GitHub Parts 1 & 2
- Azure Cloud Virtual Training Day Implementing Hybrid Infrastructure Parts 1 & 2
- Azure Cloud Virtual Training Day Microsoft Azure AI Fundamentals Parts 1 & 2 AI, ML, AutoML, NLP, Computer Vision
- Azure Cloud Virtual Training Day Microsoft Azure DATA Fundamentals Parts 1 & 2
- Azure Cloud Virtual Training Day Microsoft Azure Fundamentals Parts 1 & 2
- Azure Cloud Virtual Training Day Microsoft Azure Well Architected 1 & 2

MIT Computer Science & AI Lab-MIT Sloan School of Management AI Faculty-SME

Artificial Intelligence, Machine Learning, Deep Learning, Natural Language Processing, Robotics, RPA

MIT Computer Science & AI Lab-MIT Sloan School of Management AI Faculty-SME AI-Self Adaptive Complex Systems Pioneer
 Malhotra, Yogesh, **MIT Computer Science & AI Lab Faculty-SME: CEOs-CTOs-CFOs AI-ML Executive Guide: AI-ML-DL-NLP-Robots R&D Impact Among AI-Quant Finance Nobel Laureates: Online MIT Management & Leadership Executive Education Faculty-SME Guide on Artificial Intelligence, Machine Learning, Deep Learning, Natural Language Processing, Robotics, and, Robotics Process Automation, 2017-2018: Online E-Learning Executive Education Course** Supplement to Online E-Learning Community Network:
<https://www.linkedin.com/pulse/dear-ceo-ai-machine-learning-advice-top-industry-leading-malhotra/> .

Princeton University Presentations in AI-ML-DL-Quant-Cyber-Crypto-Quantum Risk Management-Control Systems Cyber-Finance-Trust Computing Frameworks, Model Risk Management, Black Hat Model Risk Arbitrage

Princeton University Invited Presentations in AI-Machine Learning-Deep Learning-GAN Risk Management & Control Systems

Malhotra, Yogesh, AI, Machine Learning & Deep Learning Risk Management & Controls: Beyond Deep Learning and Generative Adversarial Networks: Model Risk Management in AI, Machine Learning & Deep Learning: Princeton Presentations in AI-ML Risk Management & Control Systems (Presentation Slides) (April 21, 2018). Princeton Presentations in AI & Machine Learning Risk Management & Control Systems, 2018 Princeton Fintech & Quant Conference, **Princeton University**, April 21, 2018.
 PDF Slide Deck: <https://ssrn.com/abstract=3167035> .

Malhotra, Yogesh, Beyond Model Risk Management to Model Risk Arbitrage for FinTech Era: How to Navigate 'Uncertainty'...When 'Models' Are 'Wrong'...And Knowledge'...'Imperfect'! Knight Reconsidered Again: Risk, Uncertainty, & Profit Beyond ZIRP & NIRP (April 16, 2016). Research Presentation at: 2016 Princeton Quant Trading Conference, **Princeton University**, April 16, 2016.
 PDF Slide Deck: <https://ssrn.com/abstract=2766099> .

Malhotra, Yogesh, Future of Finance Beyond 'Flash Boys': Risk Modeling for Managing Uncertainty in an Increasingly Non-Deterministic Cyber World: Knight Reconsidered: Risk, Uncertainty, and Profit for the Cyber Era (Presentation Slides) (April 4, 2015). Princeton Quant Trading Conference 2015, **Princeton University**, April 4, 2015.
 PDF Slide Deck: <https://ssrn.com/abstract=2590258> .

AWS-Pentagon-AFRL-New York State Clouds AI-MLOps-DevSecOps-Infrastructure as Code CI-CD SME Silicon Valley-Wall Street-Pentagon-Global Boards-CEOs-CXOs Leader

"CEOs-CxOs and Enterprise Boards of Directors must realize that the Future of Computing as Global Agile Resilient On-Demand Infinitely Scalable Utility is already happening NOW. Worldwide Future-Focused CEOs-CxOs and Boards are already choosing to and planning to advance beyond "Undifferentiated Heavy Lifting" with Zero or Negative Value to Positive Business Performance Value. The latest Computing evolution in our view as Silicon Valley-Wall Street-Pentagon-Global Digital Pioneers is even more significant than the coming of the World Wide Web in early 1990s when as pioneers of Business Technology Integration we were credited by CIO Magazine for making global "BizTech" Digital Transformation and Digital Disruption a household reality."

AWS Partner Cloud Computing Boards & CEOs-CTOs-CIOs-CFOs-CXOs Reference Guide:

Malhotra, Yogesh, How You Can Implement Well-Architected 'Zero Trust' Hybrid-Cloud Computing Beyond 'Lift and Shift': Cloud-Enabled Digital Innovation at Scale with Infrastructure as Code (IaC), DevSecOps and MLOps (June 8, 2022). 2022 **New York State Cyber Security Conference**: Invited Presentation, Albany, New York: <https://its.ny.gov/2022-nyscsc>.

PDF Slide Deck <https://ssrn.com/abstract=4131044>: YouTube Presentation: <https://www.youtube.com/watch?v=1gd6mKeHJuw>.

Pentagon Joint Chiefs Guidance: US Air Force Chief Scientist Pentagon Invited Interviews

Malhotra, Yogesh, C4I-Cyber Command & Control Supremacy: Why It's More Critical Than AI & Quantum Supremacy & What You Can Do about It? Security in Post-COVID Virtual Era Beyond Data, Models, Algorithms (May 24, 2021). 2021 **New York State Cyber Security Conference**, June 8-9, 2021, Empire State Plaza - Albany, NY.

PDF Slide Deck <https://ssrn.com/abstract=3851807>: YouTube Presentation: <http://www.youtube.com/watch?v=cKEWHOPohy0>.

Air Force Research Lab-Armed Forces Communications & Electronics Association C4I-Cyber Conference Presentation

Malhotra, Yogesh, AI, Machine Learning & Deep Learning Risk Management & Controls: Beyond Deep Learning and Generative Adversarial Networks: Model Risk Management in AI, Machine Learning & Deep Learning (May 16, 2018). Paper Accepted for Presentation at the 2018 Armed Forces Communications and Electronics Association (AFCEA) C4I and Cyber Conference, Erie Canal Chapter, New York, June 19 & 20, 2018. PDF Slide Deck: <https://ssrn.com/abstract=3193693> .

New York State Governor's Cybersecurity Conferences Expert-CISO: AI-ML-Quant-Cyber-Crypto-Quantum-Quant Finance-Risk Computing

Malhotra, Yogesh, AI-Machine Learning Augmentation and Cybersecurity: Why Smart Minds Using Smart Tools Are Critical for Minimizing Risks, And, What You Can Do About It? (June 4, 2019). Presentation: 2019 **New York State Cyber Security Conference**, Albany, NY, June 4 - 5, 2019, Empire State Plaza , Albany, NY. PDF Slide Deck: <https://ssrn.com/abstract=3399781> .

Malhotra, Yogesh, Cyber-Finance: Why Cybersecurity Risk Analytics Must Evolve to Survive 90% of Emerging Cyber Financial Threats, and, What You Can Do About It? Advancing Beyond 'Predictive' to 'Anticipatory' Risk Analytics (June 8, 2016). Research Presentation at the 19th **New York State Cyber Security Conference**, Albany, NY, June 8-9, 2016, Empire State Plaza, Albany, NY. PDF Slide Deck: <https://ssrn.com/abstract=2791863> .

New York State Cyber Security & Engineering Technology Association Conference Presentation

Malhotra, Yogesh, Toward Integrated Enterprise Risk Management, Model Risk Management & Cyber-Finance Risk Management: Bridging Networks, Systems and Controls Frameworks (October 22, 2015). Presented at: 2015 New York State Cyber Security & Engineering Technology Association Conference, Oct. 22, 2015, Rochester Institute of Technology, Rochester, New York.

PDF Slide Deck: <https://ssrn.com/abstract=2792629> .

2022 AI Transformers Book Foreword: Book AI Transformers for Machine Learning: A Deep Learning Dive

<https://yogeshmalhotra.com/Transformers-Machine-Learning-Chapman-Recognition.html>

2023 AFRL Ventures Building CNY-Quantum Valley: C4I-Cyber Beyond Pentagon Joint Chiefs ABMS-JADC2 Beyond Data Protection to Command and Control (C2) Sustainability in a Post-COVID19 World: Execution of U.S. Data Protection Act for U.S. Data Protection Agency; U.S. Data Protection Act Proposal by US Senator for New York Kirsten Gillibrand

Malhotra, Yogesh. Beyond Data Protection to Command and Control (C2) Sustainability in a Post-COVID19 World: Execution of U.S. Data Protection Act for U.S. Data Protection Agency; U.S. Data Protection Act Proposal by US Senator for New York Kirsten Gillibrand, Journal of Insurance and Financial Management. Vol. Vol. 7, Issue 4 (2023) pp. 66-87:

Full-Text Paper Download: <https://ssrn.com/abstract=3581454> .

The specific focus of global networked systems, infrastructures, and networks that can get impacted in global systemic exponential cascading attacks given the inter-connectivity of networks and often endogenous nature of such attacks was compared with analogous global contagion risks of COVID-19 and their global and national 'spread' that all are monitoring. Over the subsequent few weeks, the COVID-19 global pandemic had unfolded with major adverse impacts evident across public health, global financial and economic, and, global geopolitical, national defense and security, and, related socioeconomic domains. The Survival & Sustainability of Systems at all levels which is at stake and the respective critical significance of Command & Controls - spanning global, national, organizational, individual, and, even human cellular levels of analysis – are being recognized worldwide as never before on the COVID-19 pandemic threats and vulnerabilities "global theater". The respective role of such Command & Controls that are the most essential defining attributes of all Self-Adaptive Systems and their self-identity, self-regulation, and, self-determination are also being recognized in terms of determining the Sustainability and Survival of the respective Systems at all levels. For preempting and preventing future similar global threats such as COVID-19, we need to develop and deploy Adversarial C2 systems to stress test the robustness of C2 for respective Systems as well as Counter-Adversarial C2 to counter the adversarial threats. Our Global Post AI-Quantum, Finance & FinTech, Command & Control Network ventures, United States Air Force (USAF) Air Force Research Lab (AFRL) Commercialization Academy ventures, AIMLExchange.com, BRINT.com, and C4I-Cyber.com fulfill the above global missions.

**Silicon Valley-Wall Street-Pentagon-Global CEO-CIO-CTO Practices Leader – New York State CIO-CISO Practices Leader
Top-3 DoDD IT Security Certifications: CISSP 2005-, CISA 2007-, CEH 2014-; AWS CSAA-CCP Certified-Accredited Partner**

Global Cloud Computing, Information Technology, Cybersecurity & Cryptography Practices Leadership and Impact

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| <ul style="list-style-type: none">▪ Cloud Security Services & Operations▪ Cloud Agile-Resilient DevSecOps MLOps▪ Offensive-Defensive Penetration Testing▪ IT-Cybersecurity Development-Deployment▪ IT & Cybersecurity Vision & Strategies▪ IT & Cybersecurity Policies & Programs▪ Cyber Thought Leader-Consensus Builder | <ul style="list-style-type: none">▪ Collaborations & Networks Builder▪ Risk Management Thought Leader▪ Global Trust & Credibility Leader▪ Cybersecurity Solutions Director▪ Risk Management Framework RMF▪ Security & Privacy Risk Champion▪ CIO Business Technology Security | <ul style="list-style-type: none">▪ Security Architecture DevOps-Deployment▪ Security Document Framework Leader▪ IT Governance and Compliance Leader▪ Enterprise IT Service Security Delivery▪ IT-Cybersecurity Education-Credentialing▪ IT-Cybersecurity Planning & Budgeting▪ Security Compliance-Security Operations |
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Malhotra, Yogesh, How You Can Implement Well-Architected 'Zero Trust' Hybrid-Cloud Computing Beyond 'Lift and Shift': Cloud-Enabled Digital Innovation at Scale with Infrastructure as Code (IaC), DevSecOps and MLOps (June 8, 2022). 2022 **New York State Cyber Security Conference**: Invited Presentation, Albany, New York: <https://its.ny.gov/2022-nyscsc>.

PDF Slide Deck <https://ssrn.com/abstract=4131044>: YouTube Presentation: <https://www.youtube.com/watch?v=1gd6mKeHJuw>.

Malhotra, Yogesh, C4I-Cyber Command & Control Supremacy: Why It's More Critical Than AI & Quantum Supremacy & What You Can Do about It? Security in Post-COVID Virtual Era Beyond Data, Models, Algorithms (May 24, 2021). 2021 **New York State Cyber Security Conference**, June 8-9, 2021, Empire State Plaza - Albany, NY.

PDF Slide Deck <https://ssrn.com/abstract=3851807>: YouTube Presentation: <http://www.youtube.com/watch?v=cKEWHOP0hy0>.

Malhotra, Yogesh, AI-Machine Learning Augmentation and Cybersecurity: Why Smart Minds Using Smart Tools Are Critical for Minimizing Risks, And, What You Can Do About It? (June 4, 2019). Presentation: 2019 **New York State Cyber Security Conference**, Albany, NY, June 4 - 5, 2019, Empire State Plaza , Albany, NY. PDF Slide Deck: <https://ssrn.com/abstract=3399781> .

Malhotra, Yogesh, Cyber-Finance: Why Cybersecurity Risk Analytics Must Evolve to Survive 90% of Emerging Cyber Financial Threats, and, What You Can Do About It? Advancing Beyond 'Predictive' to 'Anticipatory' Risk Analytics (June 8, 2016). Research Presentation at the 19th **New York State Cyber Security Conference**, Albany, NY, June 8-9, 2016, Empire State Plaza, Albany, NY. PDF Slide Deck: <https://ssrn.com/abstract=2791863> .

Malhotra, Y. Journal of Operational Risk, Volume 13, Number 1 (March 2018): Bridging Networks, Systems and Controls Frameworks for Cybersecurity Curriculums and Standards Development Available at Risk.Net: <https://www.risk.net/author/yogesh-malhotra> .

Applied cybersecurity practices in private and public industry in the United States are transitioning to an overall focus on cyber risk management. Hence, it is necessary to align the information technology (IT) cybersecurity application standards of professional associations and related educational curriculums with emerging applications in practice. Current standards and educational curriculums seem fragmented across network protocols and network analysis tool frameworks (NPNATFs); systems and networks infrastructure frameworks (SNIFs); and risk management and controls policy frameworks (RMC PFs). This paper develops an applied framework for aligning, integrating and streamlining standards and curriculums across all three levels, aligning them with the needs of applied risk management practice. A cyber risk management framework is developed with a focus on voice over internet protocol (VoIP) networks. These networks have been gaining central prominence across diverse industries, such as global banking and finance, over the past decade. Despite their central role (in both technological and economic terms), sparse attention has been given to their critical vulnerabilities – described as the “weakest links” in global banking and finance networks – as is evident from cybersecurity and penetration testing. This paper demonstrates the contribution of the proposed cyber risk management framework in addressing such critical gaps in global banking and finance cybersecurity and information assurance practices. The latter constitutes an example application of the proposed framework; it is extendable to multiple other industries including health care.

Malhotra, Yogesh, Quantitative Modeling of Trust and Trust Management Protocols in Next-Generation Social Networks-Based Wireless Mobile AD HOC Networks (April 1, 2017). IUP Journal of Computer Sciences, Vol. XI, No. 2, pp. 7-28. April 2017, Available at SSRN: <https://ssrn.com/abstract=2983573> . Trust and trust management represent the very foundations of Computer and Network Security Protocols enabling all cyber activities. The recent spate of national and global high-impact cyber security compromises threats, vulnerabilities and exposures leads to fundamental questioning of trust as the key enabler of all cyber phenomena in the unfolding era of exponentially increasing distrust. It is, therefore, necessary to understand the current state of trust and trust management modeling and implementation in the highest security environments such as in defense and space. Such understanding can serve as a foundation for modeling, design and implementation of next-generation mobile wireless networks for other high security environments such as in banking and finance. This study attempts to understand how trust and trust management are being modeled for the next-generation wireless communication systems (NIST) such as autonomous self-discovering, self-organizing and self-adaptive mobile ad hoc networks. Within the context of Network-Centric Operations (NCO), the paper examines (i) the capabilities of next-generation wireless mobile ad hoc networks; (ii) how trust and trust management are modeled in such mobile ad hoc networks; and (iii) how trust and trust

management are implemented in trust-based task assignment in tactical networks. US Army Research Laboratory (ARL) Computational and Information Sciences Directorate's Network Science research program on wireless mobile ad hoc networks is the focus of the case study.

NYS Top Digitized CIO-CISO Practices Leader: IT Administration & Networks Administration

Directed, planned, organized and controlled all IT Administration-Networks Administration-Network & Computer Systems Security activities for New York State (NYS) Top-Digitized Government Administration as it pertains to administering a complex, multi-platform computing, telecommunications, networking and IT systems used by one thousand users servicing the Digital and IT needs of 100,000 NYS constituents across the county. Had primary responsibility for building and leading a customer-service focused organization responsible for the development and delivery of innovative, efficient and effective technology services and systems supporting the New York State mission in collaboration with State IT Coordinators at NYS IT Services, Albany. Build and delivered IT and Networks Administration and Cybersecurity vision and leadership for developing and implementing information technology initiatives in order to improve cost effectiveness, service quality and business development. Responsible for all aspects of the NYS county's information technology and systems for developing and implementing a customer service platform to serve the one-thousand internal users serving the needs of 100,000 external constituents. Responsible for creating and implementing Information Technology Administration, Network Administration, and, Network and Computer Security policies.

Led multiple diverse teams of IT leadership and staff for ensuring that the county Government Administration (GA) employees received quality, consistently available computer and networking services. Ensured support provision for training and maintenance of all computer systems used throughout the GA. Managed the design and maintenance of a network and security infrastructures for local and wide area connectivity and remote access. Led Network Administrators for the development and implementation of the GA IT and electronic communication strategy for wired, mobile, and wireless networks security and networks administration.

Managed the day-to-day operations of the information technology department including directing staff, who support administrative computing, networking, user services, telecommunications and other information technology functions. Set direction for personnel, developed and leveraged technology solutions in a collaborative and proactive manner and provided quality service to end-users while developing and executing robust and secure standards for oversight, monitoring and coordination of IT consultants and contractors.

Responsible for overseeing the procurement, installation and maintenance of computer hardware and software and other products and supplies necessary to keep computer systems operable and to fulfill managements requests for computer support. Acted as the liaison between hardware and software suppliers and GA stakeholders for informational updates and problem resolution. Evaluated new equipment, software and processes continuously, recommended changes as appropriate, and supervised their installation.

Responsible for establishing and leading standards, metrics, processes and procedures to enhance IT department productivity, quality and reliability of output and cost of services. Developed methods to continually improve results exceeding expectations. Provided leadership, oversight and direction to direct reports assuring goals, programs, activities, and personnel practices are in alignment with and contribute to the Institution's goals and strategies. Designed and implemented operating strategies, plans and procedures to assure smooth functioning of the GA and IT and Networks Administration. Motivated-inspired-led IT leaders, staff and users for maximizing performance and provided performance management feedback for goals achievement.

Consulted with senior management, functional area managers, and R&D operations representatives to exchange information, present new approaches, and discuss equipment/system changes. Assessed and anticipated technology projects and recommended appropriate actions and resources for promoting enhance and supporting multiple GA service delivery missions and goals.

Maintained security of all data proprietary and provides for the complete backup of all computer systems in case of system failures or disasters for business continuity. Managed contract negotiations with vendors following State procurement rules and regulations.

Created, maintained and enforced written policies and procedures regarding all computer operations in the IT Administration, Networks Administration, and, Networks and Computer Security Functional Area and throughout the GA.

Global IT-Cybersecurity Industry Standards leading invited presentations at Princeton Quant Trading Conference on AI, Machine Learning, Deep Learning, Cybersecurity, Cryptography, and, Quantum Computing. Built on Cyber Insurance and Risk Management post-doctoral research ranked by SSRN in 101 Top-10 Research Rankings and in Top-1% SSRN Authors advancing upon R&D ranked and recognized for impact among Nobel laureates. Advanced upon strategic and technical hands-on leadership of Wall Street investment banks with \$1 Trillion AUM such as JP Morgan guiding Executive Directors, Managing Directors, and, Portfolio Managers.

Digital Disruption & Digital Innovation CIO-CISO Practices Leading Silicon Valley-Wall Street-Pentagon recognized for impact in worldwide press such as in CIO Magazine and CIO Insight CIO Global Impact Interviews. New York State CIO-CISO Practices Expert building and leading innovative AWS Partner, Pentagon Joint Chiefs Guidance, and, MIT Computer Science and Artificial Intelligence Lab Faculty-Subject Matter Expert, and, Princeton Quant Finance and Trading and FinTech-Crypto Subject Matter Expert Digital CIO-CISO Practices Pioneering CIO-CISO R&D, Tech Deployment, Education, & Commercialization such as through USAF-AFRL Ventures.

New York State IT Administration, Networks Administration and Security Expert over a span of six years, 2016-2022, having served in the NYS CISO-role as Head of IT Systems Security Administration and Networks Administration for the CIO-Director for Government Administration of 1,000 users responsible for 100,000 New York State constituents. NYS CIO-CISO Practices Expert on Enterprise Networks and Systems Security Engineering, Cryptocurrency and Digital Currency-Blockchain Technical-Encryption-Protocols, AI-ML-DL-Cyber-Crypto-Quantum Cryptography and Cryptanalytics, and, Offensive-Defensive Cybersecurity and Penetration Testing.

Defined, designed, executed, and, implemented industry standards and best practices ensuring compliance with Federal, State, Industry, and, Vendor-specific Cybersecurity-Risk Management criteria such as ISO, NIST, FIPS, COBIT, OWASP, Qualys, SANS, PCI-DSS, NYS Cybersecurity Rule, Microsoft, Cisco, Fire Eye, etc. Cybersecurity Risk Engineering Leading Cyber Deterrence including Deployment of Cyber Security Technologies: Applications, Devices, End Points, Hosts, Networks, Operating Systems, Unified Threat Management-Firewall, and, Mobile Device Management Systems such as: AirWatch, Check Point, Cisco, FireEye, Fortinet, Fortis, Intel, McAfee, Microsoft, Palo Alto, PDQ Deploy, Proofpoint, Qualys, Sophos, Symantec, VMWare, WatchGuard, etc.

IT & Cybersecurity Industry Standards & Best Practices Development Leader

Served on the IT Administration senior leadership CIO-CISO team providing domain expertise, direction, and, policy guidance on Cyber Security and IT Administration and Networks Administration. Provided direction on information security and privacy across all enterprise multi-site facilities and programs including all Financial Systems, Healthcare Systems, and State Emergency Response Systems affecting 100,000 constituents. Broad authority and management responsibility for protecting the privacy, confidentiality, integrity, and availability of enterprise information and services. Aligned services responsible for information security, privacy, and security operations to enable enterprise business objectives within acceptable levels of security and privacy risk.

Benchmarking & Deploying IT & Cybersecurity Risk Engineering for Leading Cyber Deterrence:

Cyber Security Technologies: Applications, Devices, End Points, Hosts, Networks, O/S, UTMs: AirWatch, Check Point, Cisco, FireEye, Fortinet, Fortis, Intel, McAfee, Microsoft, Palo Alto, PDQ Deploy, Proofpoint, Qualys, Sophos, Symantec, VMWare, WatchGuard, etc.

Best Practices & Industry Standards:

CERT, Cisco, FBI, FIPS, Fire Eye, Gartner, GIAC, ISACA, Microsoft, NIST, NSA, OWASP, SANS, etc.

Penetration Testing-Ethical Hacking Frameworks & Tools

Metasploit, Nmap, Wireshark, Several Others.

IT & Cybersecurity Leader leading, executing, implementing, and, guiding New York State Enterprise IT Administration and Network Administration practices with focused domain expertise in Quant Finance, Cyber Security, Cryptography, Networking-Encryption Protocols, Penetration Testing-Ethical Hacking, Machine Learning Algorithms, Computational Quant Analytics, Risk Analytics.

IT Administration & Networks Administration, Cybersecurity-Risk Management Leader

- **Enterprise-wide IT, Telecom Networks, Cybersecurity & Risk Management, Controls & Compliance Policies, Best Practices, Strategies, Technologies, including Enterprise Level Implementations, IT Procurements and Contracts.**
- **Multi-Factor Authentication & Credentialing; User Access Controls & Group Management Policies** for all Users including Authentication, Credentials, Password Policies, BYOD MFA & 2FA Policies, Anti-Malware Botnet and Anti-Ransomware Policies, etc.
- **Multi-site Systems Administration including Group Management Policies & Configurations, Cybersecurity Risk Management Controls & Compliance Policies, UAC, and Defense-in-Depth against Advanced Threats & Attacks.**
- **Multi-site Enterprise-wide Telecom Networks, Hosts, Devices, Applications, OSs, and, IPs Vulnerability and WWW Applications Vulnerability Detection & Remediation** leading Risk Mitigation, Network Security, Risk Management, & Compliance Policies, Strategies, &, Implementation, and, WWW Security Standards and Secure Coding Practices.
- **Multi-site Enterprise-wide Penetration Testing & Ethical Hacking enabling Pre-emptive and Anticipatory Risk Management and Controls** for Cybersecurity Risk mitigation for Networks, Applications, Hosts, Devices, Firmware, Embedded Systems, SCADA, and, Third-Party Services and Infrastructure Providers.

- **Multi-site Enterprise-wide development of Zero-Trust UTM, NGFWs, IPS/IDS, VLANs/VTP/STP, and UAC-ACL Policies and Architectures** using Network Segmentation based on industry-leading Cyber Security, Risk Management, and Compliance Policies.

- **Multi-site Enterprise-wide Networks, Operating Systems, Hosts, Applications, and Mobile Device Management Security Controls** Risk Management Audit & Threat Analysis including Identification, Elimination, Containment & Mitigation of Critical Risks.

Defense-in-Depth Enterprise Networks & Computer Security-Privacy Leader

- **Enterprise Networks-Perimeter & Networks Segmentation:**

Enterprise Networks-Perimeter and multi-layered Network Segmentation hardening against cyber-attacks tracked by Unified Threat Management infrastructure using Big Data Analytics, High Frequency Time Series Data Analytics, and, Networks Logs Analysis.

- **Enterprise Hosts & Server End Point Protection Security:**

Endpoint (EP) upgrades for Hardening against Cyber Attacks coupled with Attacks and Malware reports analyses. Continuing benchmarking, Procuring and Implementation focus on more robust EP solutions to integrate, simplify, and, economize current EP & MDM infrastructures.

- **Enterprise User Access Controls, Credentials, Passwords:**

Passwords, credentials, user access controls, and, privilege reviews and upgrades at the Policy, Networks-UTM, Operating Systems, Applications, Host, and Device levels and Policies and Processes for tiered UAC and credentials for internal and external users.

- **Enterprise Security Content Automation Protocol Implementation:**

MS-Windows O/S & Applications hardening based on security, risk, compliance group policies development and Active Directory-Group Policy implementations with Security Content Automation Protocol – Security Compliance Manager.

- **Enterprise Microsoft Network Operating Systems & Applications Security:**

MS-Windows Active Directory-Group Policy Network Operating Systems security configurations for hardening Windows Network O/S and Microsoft Windows based MS-Office S/W applications for cybersecurity threats & attacks mitigation.

- **Enterprise Mobile Device Management & Multi-Factor Authentication:**

Coordinating enterprise-wide administration Mobile Device Management for mobile devices toward simplified administration and MFA/2FA while also reviewing latest technologies for integration of MDM with EP.

Zero-Trust Cybersecurity Architectures & Networks Segmentation Leader

- **Zero-Trust Network Segmentation:** Benchmarked-selected top-ranked UTM to replace prior NGFW. Reviewed-audited configuration of 125 UTM Policies and RADIUS-based VPN policies to apply robust networking and encryption protocols for mitigating threats from SMB, NetBIOS, SNMP, NTLM, and, PPTP.

- **Security Content Automation Protocol (SCAP):** Configured more than 1,000 Group Policies using Security Compliance Manager. Configured, installed, and, implemented active directory (AD) and group policy management (GPM) policies.

- **Validation & Audit of IP Networks Subnets & VLANs** Identified-eliminated threats and vulnerabilities in Information Gathering, TCP/IP, General Remote Services, Firewall, and Web Server hardening network, servers, hosts, applications, and devices, and, access controls and authentication protocols such as SSL/TLS, IPsec, STP, and VTP.

- **OWASP secure coding practices adoption by Systems, Analysis, and Design teams** blocking cyber-attacks such as SQL injection and buffer overflow attacks advancing secure PKI authentication and TLS 1.2, IPsec, AES256, and RSA2048.

- **Audit of Virtual Private Networks using RADIUS to bolster credentials authentication** by advancing mobile VPN Authentication from PPTP to L2TP and IPsec eliminating reliance upon CHAP thus advancing toward enterprise-wide non-reversible encryption.

- **Reconfiguration & Implementation of AD-GPM Default Domain Controllers Policy** for Network Security advancing toward secure Kerberos authorization and authentication architecture for enterprise-wide users.

- **Reconfiguration & Implementation of AD-GPM Default Domain Policy** for securing user credentials advancing upon development of secure host-based user access credentials architecture for enterprise-wide users.

- **Development & configuration of AD-GPM Password Security Objects (PSOs)** to advance development of fine-grained password policies for different privilege levels of enterprise wide internal and external users.

Princeton SME: Quant Finance & Trading-Hedge Funds-Asset Management-Risk Modeling-Trading-Portfolio Management
AACSB R&D Impact Recognized Among Quant Finance Nobel Laureates: Black-Scholes, Harry Markowitz, William Sharpe

\$Trillion Wall Street Hedge Funds & Investment Banks, Big 3 Global Banking & Finance, Big 3 Global IT Firms

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| <ul style="list-style-type: none">Princeton Quant Finance-Trading SMEJP Morgan Portfolio-Liquidity Risk SMENAIC Cyber Risk Insurance SMECFA AI-Model Risk Management SMEPRMIA post-VaR, CVAR, ES-EVT SMEState Street Catastrophic Risk ModelsState Street Associates HF Alpha SME | <ul style="list-style-type: none">Future of Finance e-Payments SMEComputational Finance LeaderQuantitative Trading LeaderCyber-Finance Market Risk SMECredit Risk & Default Models SMEHigh Frequency Trading Models SMEHF Econometrics Microstructure SME | <ul style="list-style-type: none">Model Risk Management SMEBlack Hat Model Risk Arbitrage SMEAnticipatory Risk Analytics ModelsAdvanced Financial EconometricsGlobal Ventures & Teams LeaderDerivatives: Equity, Credit, RatesEquity and Fixed Income Portfolios |
|---|---|--|

AI-ML-Advanced Analytics-Data Science-Advanced Financial Econometrics-Network Security-Cryptography: Post-Doctoral Computer Science and Network & Computer Security Thesis: Quantitative Finance & Trading- Hedge Funds-Asset Management-Risk Modeling-Trading-Portfolio Management

A Report on the Future of Finance, Future of Risk, and Future of Quant:

Malhotra, Yogesh, **A Report on the Future of Finance, Future of Risk, and Future of Quant: Risk, Uncertainty, and, Profit for the Cyber Era: Model Risk Management of Cyber Insurance Models using Quantitative Finance and Advanced Analytics** (January 19, 2015). A Report on the Future of Finance, Future of Risk, and Future of Quant: Risk, Uncertainty, and, Profit for the Cyber Era: Model Risk Management of Cyber Insurance Models using Quantitative Finance and Advanced Analytics. Abridged version published as the National Association of Insurance Commissioners (NAIC) Expert Paper.

PDF Download: 184 pages: SSRN: <https://ssrn.com/abstract=2553547> .

MIT Computer Science & AI Lab-MIT Sloan School of Management AI Faculty-SME Artificial Intelligence, Machine Learning, Deep Learning, Natural Language Processing, Robotics, RPA

MIT Computer Science & AI Lab-MIT Sloan School of Management AI Faculty-SME AI-Self Adaptive Complex Systems Pioneer
Malhotra, Yogesh, **MIT Computer Science & AI Lab Faculty-SME: CEOs-CTOs-CFOs AI-ML Executive Guide: AI-ML-DL-NLP-Robots R&D Impact Among AI-Quant Finance Nobel Laureates: Online MIT Management & Leadership Executive Education Faculty-SME Guide on Artificial Intelligence, Machine Learning, Deep Learning, Natural Language Processing, Robotics, and, Robotics Process Automation, 2017-2018: Online E-Learning Executive Education Course** Supplement to Online E-Learning Community Network: <https://www.linkedin.com/pulse/dear-ceo-ai-machine-learning-advice-top-industry-leading-malhotra/> .

Princeton University Bendheim Center for Finance-Operations Research & Financial Engineering Faculty-SME Quantitative Trading-Computational Finance-FinTech-Crypto Pioneers - Sponsors: Goldman Sachs, Citidel

Malhotra, Yogesh, AI, Machine Learning & Deep Learning Risk Management & Controls: Beyond Deep Learning and Generative Adversarial Networks: Model Risk Management in AI, Machine Learning & Deep Learning: Princeton Presentations in AI-ML Risk Management & Control Systems (Presentation Slides) (April 21, 2018). Princeton Presentations in AI & Machine Learning Risk Management & Control Systems, 2018 Princeton Fintech & Quant Conference, **Princeton University**, April 21, 2018.

PDF Slide Deck: <https://ssrn.com/abstract=3167035> .

Malhotra, Yogesh, Beyond Model Risk Management to Model Risk Arbitrage for FinTech Era: How to Navigate 'Uncertainty'...When 'Models' Are 'Wrong'...And Knowledge'...'Imperfect'! Knight Reconsidered Again: Risk, Uncertainty, & Profit Beyond ZIRP & NIRP (April 16, 2016). Research Presentation at: 2016 Princeton Quant Trading Conference, **Princeton University**, April 16, 2016.

PDF Slide Deck: <https://ssrn.com/abstract=2766099> .

Malhotra, Yogesh, Future of Finance Beyond 'Flash Boys': Risk Modeling for Managing Uncertainty in an Increasingly Non-Deterministic Cyber World: Knight Reconsidered: Risk, Uncertainty and Profit for the Cyber Era (Presentation Slides) (April 4, 2015). Princeton Quant Trading Conference 2015, **Princeton University** April 4, 2015. PDF Slide Deck: <https://ssrn.com/abstract=2590258>.

Chartered Financial Analysts (CFA) Society Invited Keynote Presentation: Goldman Sachs-JP Morgan AutoML

Malhotra, Yogesh, **The CFA Society Keynote: Advancing Hedge Funds Chief Investment Officer Practices: Model Risk Management with Auto Machine Learning: JP Morgan and Goldman Sachs Practices Case Studies.** (Presentation: 107 slides) (October 16, 2018).

PDF Slide Deck: SSRN: <https://ssrn.com/abstract=3312568>.

Professional Risk Management International Association (PRMIA) Presentation: Kellogg School of Management

Malhotra, Yogesh, **Measuring & Managing Financial Risks with Improved Alternatives Beyond Value-at-Risk (VaR). Professional Risk Management International Association (PRMIA) VaR Curriculum Advancement Presentation, PRMIA Complete Course on Risk Management.** Kellogg School of Management. Northwestern University. July 21-25.

2014. Latest Update Published on SSRN, 17 Apr 2015. Original version presented at the Fordham University Presentation, January 26, 2012. Available at SSRN: <https://ssrn.com/abstract=2594859>.

National Association of Insurance Commissioners (NAIC) Invited Expert Paper and National Expert Panel

Malhotra, Yogesh, **Advancing Cyber Risk Insurance Underwriting Model Risk Management beyond VaR to Pre-Empt and Prevent the Forthcoming Global Cyber Insurance Crisis** (December 7, 2017). PDF Slide Deck: SSRN: <https://ssrn.com/abstract=3081492>.

Recent Journal Articles: AI-ML-Advanced Analytics-Data Science-Risk Modeling: Hedge Funds-Financial Markets-Exchanges

Malhotra, Yogesh, Framework of CreditMetrics Methodology for Credit VaR. The IUP Journal of Financial Risk Management, Vol. 19, No. 3, 2022, Available at SSRN: <https://ssrn.com/abstract=4301859>. Credit Risk can result in potential loss due to the inability of a counterparty to meet its obligations and is a function of the credit exposure, the probability of default and the loss in the event of default. For a given credit instrument portfolio of Credit obligations such as a portfolio of corporate bonds or swaps, Credit Value-at-Risk (VaR) quantifies how much at most can be lost with a given probability over a specific time horizon (Malhotra 2015). The associated CreditMetrics Methodology, originally introduced in 1997 by JP Morgan has become the “de facto industry standard” along with Credit VaR for credit risk modeling among global financial institutions as well as their regulators (Malhotra 2022). Described by Hull (2012) as ‘a procedure for calculating credit value at risk’, CreditMetrics methodology (RiskMetrics Group, 2007) is used for assessing portfolio risk due to changes in bond or debt value caused by credit quality changes, including credit migration as well as default.

Malhotra, Yogesh, Beyond ‘Bayesian vs. VaR’ Dilemma to Empirical Model Risk Management: Managing Risk for Hedge Funds. The IUP Journal of Financial Risk Management, Vol. 19, No. 2, 2022, Available at SSRN: <https://ssrn.com/abstract=4301788>. Despite its limitations, the Bayesian methodology has significant advantages. Just like all other quantitative models, VaR— [mostly] non-Bayesian and [increasingly] Bayesian—continues to be a key methodological foundation of risk management and regulation-related risk modeling practices in global finance. VaR frameworks are empirically applied for hedge fund risk modeling of multi-asset fund of funds portfolios of a large investment bank. In this study, multiple risk models and measures with transparent assumptions to cross-validate convergent findings across multiple levels of risk analysis are examined for empirical model risk management.

The Capco Institute, A Wipro Company: Journal of Financial Transformation: Alternative Capital Markets: Alternative Risks:

Malhotra, Yogesh, Artificial Intelligence Augmentation for Large-Scale Global Systemic and Cyber Risk Management Projects: Model Risk Management for Minimizing the Downside Risks of Artificial Intelligence and Machine Learning (April 29, 2019). Journal of Financial Transformation, Capco Institute (UK), Vol. 49, pp. 94-99. April 2019, Available at Capco, A Wipro

Company: <https://www.capco.com/Capco-Institute/Journal-49-Alternative-Capital-Markets/AI-AUGMENTATION-FOR-LARGE-SCALE-GLOBAL-SYSTEMIC-CYBER-RISK-MANAGEMENT-PROJECTS>. This article discusses how model risk management in operationalizing machine learning (ML) or algorithm deployment can be applied in national systemic and cyber risk management projects such as Project Maven. After an introduction about why model risk management is crucial to robust AI, ML, deep learning (DL), and neural networks (NN) deployment, the article presents a knowledge management framework for model risk management to advance beyond “AI automation” to “AI augmentation.”

Risk Management R&D recognized for global impact on practices among Finance Nobel laureates Black-Scholes, Markowitz and Sharpe in the [AACSB Impact Research Report](#). Invited presentations innovating Model Risk Arbitrage for AI-ML-Quant-Cyber-Crypto-Quantum Risk Computing at Princeton University Bendheim Center of Finance sponsored by Goldman Sachs and Citadel. National Association of Insurance Commissioners Expert Paper-Panel on Cyber Risk Insurance Models.

Python Quants AI-Algorithmic Digital Currency Trading: Interactive Brokers-Gemini-OANDA: Time Series, DNNs.

Python Quants AI-Algorithmic focus on TensorFlow Deep Neural Networks etc.

FinTech Python, NumPy, pandas, Jupyter Notebook applications:

- Reading, manipulating, visualizing time series: SciPy, NumPy, pandas.
- Formulating algo trading strategy based on SMAs using vectorization.
- Back-testing performance of algo trading strategy using vectorization.

Developing-Implementing Deep Learning DNNs & Machine Learning OLS & Logistic Regressions

- Scikit-Learn & TensorFlow Deep Neural Networks Implementations for Algo Trading.
- Reading-manipulating financial time series data with NumPy & pandas.
- Applying OLS, Logistic Regression & Deep Neural Networks for stock movement prediction.

Developing & Implementing Tick Server & Clients for Streaming Data with ZeroMQ & plot.ly.

- Writing a simple tick data server with ZeroMQ.
- Writing different tick data client variations, e.g. to collect & resample tick data.
- Implementing an online real-time trading algorithm.
- Visualizing streaming data with plot.ly.

Developing & Implementing Interactive Visualisation with Eikon API & Cufflinks.

- Eikon API + Python for Scraping different types of data (tick, news).
- Interactive visualisations & Quant Figures with plot.ly & Cufflinks.

Digital Currency AI-Algorithmic Trading: Oanda Platform & Python wrapper.

- Using tpqoa Python wrapper class for retrieving historical & streaming live data.
- Using intraday data to backtest & implement automated trading algorithm.

Automated Trading Algo Implementation: Interactive Brokers & Gemini.

- Python wrapper classes: tpqib, pygem & pygem_socket: for placing & following orders.
- Retrieving historical data & streaming live data, using intraday data for backtesting.

JP Morgan Investment Bank World HQ, Advisor-Chief Research Scientist, Quant Finance-Risk Modeling

Venture Capital, JP Morgan Private Bank, Goldman Sachs Alumnus' Asset Management Firm, NY.
Global Risk Management Network, LLC Venture Capital Finance-IT-Risk Management Ventures.

Algorithms, Machine Learning, Quantitative Finance, Quantitative Risk Modeling.

Project Leader, Venture Capital Projects, Wall Street Investment Bank Projects, Manhattan

- Liquidity Risk, Market Risk & Credit Risk Modeling, Portfolio Liquidity Risk Optimization
- Hedge Fund Risk Modeling, Trading & Hedging Strategies for Maximizing Alpha

Market Risk Models

Volatility Models, ARCH/GARCH, MLE, Portfolio VaR, QMLE, Non-Normality, Cornish-Fisher, Extreme Value Theory (EVT), Expected Shortfall (ES), Coherent/Spectral Risk Measures, Weighted/Filtered/Historical Simulation, Monte Carlo, Back-testing VaR/Expected Shortfall, Stress Testing, Basel II/III

Credit Risk Models

Probability of Default (PD), Loss Given Default (LGD), Expected Default Frequency (EDF), Basel II/III, Exposure at Default (EAD), Worst Case Default Rate, Risk Weighted Assets (RWA), Counterparty Risk, CreditMetrics, KMV, VaR, Credit Valuation Adjustment (CVA), Credit Default Swaps, Default Probabilities, Gaussian Copula, Simulations, Large Portfolio Approximation, Stress Testing

Interest Rate Derivatives Models

Simulations, Tree Models, Calibrations; Continuous Time, CIR, Vasicek, Merton, Hull-White, BDT, & HJM Models; Bond Options, Treasuries, Coupon Bonds, Caplets, Floorlets, Swap Contracts, Bond Risk Premia, Yield Curve, Markov Regime Switching

Equity Portfolio Models

Derivatives, Mean-Variance Portfolios, CAPM, Passive/Active Portfolio Performance, Multi-Factor Models, Cross-Sectional Returns, Asset Allocation, Risky/Risk-Free Portfolios, Diversification, Risk Pooling, CAPM, Anomalies, Dividend Discount/Growth Models

Fixed Income Portfolio Models

Bond Valuations, Derivatives, Yields, Term Structure, Credit Spread, Credit Risky Bonds, Interest Rate Risk, Portfolio Performance, Passive/Active/Liability Funding, Hedging, Swaps, Forwards, Futures, ABS, MBS.

Project Leader, JP Morgan Portfolio Construction, Optimization & Stress Testing

JP Morgan Private Bank, JP Morgan \$500-600 Billion Fund of Funds, Midtown Manhattan, NY.

Client: JP Morgan Global Head of Quantitative Research & Analytics-US Head of Portfolio Construction.

\$500-600 Billion 17-Asset Fund of Funds Portfolio Construction, Optimization and Stress Testing

Alternative Investments, Hedge Funds, Equities, Commodities, Fixed Income, Bonds, Currencies

Asset Pricing, Risk Management, Liquidity Risk, Market Risk, Credit Risk, ALM Risk, Portfolio Risk, Investment Risk, Non-Normality, Non-Linearity.

- Led quantitative portfolio liquidity modeling for \$500B fund-of-funds & hedge funds (HF).
- Led literature review of all liquidity risk models, methods, and measures.
- Led project management & scheduling and delivering high quality results on time.
- Led interpretations of all outcomes and presentations to Quants, CIO, MD, PM.
- Assets: alternatives, HF, equities, commodities, fixed income, bonds, currencies.

- Analyzed market risk, credit risk, ALM risk, portfolio risk, investment risk.
- Led modeling and stress-testing for all asset classes and composite portfolio.
- Led validation of all liquidity and liquidity risk models and measures.
- Led verification of model performance, limiting behaviors, responses to stress.
- Led modeling of pricing & risk measurement with specific focus on liquidity.
- Led evaluation of third-party models, data, software for diverse asset classes.
- Led inventorying of model assumptions and assessment of model risks for all assets.
- Modeled historical simulation, parametric & modified VaR, expected shortfall.
- Modeled and analyzed multi-asset volatility, variances & correlations, GARCH, MLE.
- Modeled VaR, QMLE, non-normality, Cornish-Fisher, EVT stochastic models for assets.
- Modeled and analyzed liquidity risk models for all assets and portfolio optimization.
- Identified & defined benchmark indices & data sources for all asset classes.
- Assessed soundness of liquidity & liquidity risk models for assets & portfolio.

Project Leader, JP Morgan Portfolio Liquidity Risk Modeling Framework, Midtown Manhattan

JP Morgan Private Bank, JP Morgan \$500-600 Billion Fund of Funds, Midtown Manhattan, NY.

JP Morgan Hands-On Team Leadership Projects Leader

JP Morgan Portfolio Liquidity Assessment Framework Development Leader

Client: JP Morgan Global Head of Quantitative Research & Analytics, JPM US Head of Portfolio Construction

Program, Projects and Teams Leader: Senior EDs/MDs, Portfolio Managers, Quants-Financial Engineers.

JP Morgan Portfolio Construction & Optimization Liquidity Assessment Framework

Asset Pricing, Risk Management, Liquidity Risk, Market Risk, Credit Risk, ALM Risk, Portfolio Risk, Investment Risk, Non-Normality, Non-Linearity. MATLAB, SAS, C++, MS-Excel, VBA, Bloomberg.

Developed Large Equities, Developed Small Equities, Emerging Equity, Unlisted Equity, Various Commodities, Government Bonds, Investment Grade Bonds, Inflation-Linked Bonds, High Yield Corporate Bonds, Emerging Market Hard Currency Bonds, Emerging Market Local Currency Bonds, Major Currencies, Hedge Funds: Statistical Arbitrage, Equity Hedge, Merger Arbitrage, Macro, Relative Value.

17-Asset Class Portfolio Liquidity Assessment & Stress Testing Research & Analysis:

Advanced on Synthesis of 25-Years of Liquidity Measurement R&D in Academic, Policy, and Practice Literatures:

Industry-Leading Technical Credit Risk, Market Risk and Liquidity Risk

Quantitative Finance & Financial Engineering Models, Methods, & Measures R&D.

Project Leader, Hedge Fund Quantitative Finance & Financial Risk Modeling: 400 Hedge Fund Strategies

Goldman Sachs Alumnus' \$400-500 Billion Asset Management Firm, Midtown Manhattan, NY.

Project: Hedge Fund Quantitative Finance & Quantitative Risk Modeling

Goldman Sachs Alumnus' \$400 Billion+ Asset Management Firm.

Client: Wall Street SVP Hedge Fund Manager with Top Wall Street Investment Banks:

- SAS High Frequency Econometric Modeling of Market Microstructure for High Frequency Trading.
- 400 State Street Associate Trading Strategies Analysis for Alpha and Risk.
- Hedge Fund Performance Analysis for High Frequency Econometrics Market Microstructure.
- Quantitative Finance, Quantitative Risk Modeling of Liquidity as Price Impact.
- Analyzed 400 Finance & Economics Empirical Research Papers on Alpha Trading Strategies.
- Replicated /Analyzed Large Scale Data HF Econometrics Models of Market Microstructure.
- Critical Review of State Street Associates Quarterly Scan Trading Strategies.
- High Frequency Econometrics Models of Trade Price Impact & Market Microstructure.
- Researched Co-Integrated Time Series for Ultra-High Frequency Tick-and-Quote (TAQ) Data.
- Presented and Taught VARMAX Models of Co-Integrated Time Series for HF Econometrics.
- Analysis: Why Existing 'Alpha' Research Is Insufficient for Profitable Hedge Fund Asset Management.