



Artificial intelligence in finance and
accounting - Challenges
and opportunities for academic work,
practices and policies in finance and
accounting

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Speaker: Prof. Sardar M. N. Islam (Naz)

Ph.D., CPA, LL.B., M. A. (First Class), M. A., B. A. (Hons), A Short Course on Counselling.

Professor, ISILC, & Director of Decision Sciences and Modelling Program;

Victoria University.

Distinguished Visiting Professor of Artificial Intelligence, Sriwijaya University.

1. Member of Australian Computer Society;
2. Member of (a) the IEEE and (b) the Computer Society.

Areas of My Interest & Expertise:

Artificial Intelligence, Analytics, Machine Learning, Data Science,

Blockchain, Cybersecurity, etc. & their Mathematics, and Applications in

Business disciplines, Health, Engineering, Law, etc.

Questions and comments can be sent to:

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Structure of the Talk

- ❖ Artificial Intelligence: What is it, how does it work
- ❖ Applications of Artificial Intelligence in Accounting and Finance
- ❖ Benefits and Risks of Artificial Intelligence: General and in Accounting and Finance Sectors
- ❖ Proper Management of the Applications of Artificial Intelligence in Accounting and Finance
- ❖ My Publications and References

Artificial Intelligence: What is it, how does it work?

- ❖ A computer program (algorithm and computer software) that helps machine to work like human beings – to perform tasks, think, understand, feel, sense, etc.
- ❖ AI theory and implementation – rule based and evidence based implementation

Artificial Intelligence: What is it, how does it work?

- ❖ Machine learning, data science, data analytics, portals/software/platforms/website, etc.
- ❖ Combined uses of mathematics (operations research, statistics, etc.), computer programs, Accounting and Finance, artificial intelligence.
- ❖ To automate and for efficient Accounting and Finance.

Artificial Intelligence: What is it, how does it work?

- ❖ Role of data
- ❖ AI, Mathematics, Computation, and Algorithms
- ❖ Pioneering Specialized Hardware.
- ❖ Finally: AI in Accounting and Finance: A computer program for performing and automating Accounting and Finance tasks and decisions.
- ❖

Artificial Intelligence and the Emergence of FinTech : Reconstruction of Finance Theory and Operations

- ❖ AI Uses in Computer Science and Other Applications
- ❖ Automating Common Processes
- ❖ AI and Health and Medical Issues
- ❖ AI and Human Relationships

Artificial Intelligence and Accounting and Finance Theory and Operations

- ❖ **Extensive Uses of AI in all areas of Society, Business, Life, etc.**

Artificial Intelligence and Accounting and Finance Theory and Operations

- ❖ Many Uses of AI in Accounting and Finance: A computer program for performing and automating many Accounting and Finance tasks and decisions.
- ❖ Many uses in Finance, Banking, Insurance, etc.
- ❖ Emergence of Fintech:
- ❖ Using technology to do Accounting and financial activities
- ❖ AI and Fintech automate many /all Accounting and Finance operations including auditing, reporting, banking, risk management, insurance, financial market operations, all financial services, etc.

Artificial Intelligence & Reconstruction of Accounting and Finance Theory and Operations

- ❖ AI and Fintech affect Accounting and Finance theory, policies and operations substantially:
- ❖ Traditional Accounting and Finance theories policies and operations need modifications –
- ❖ Academics need to teach and do research the new developments in Accounting and Finance to make knowledge relevant for the current world.

Artificial Intelligence and the Emergence of FinTech : Reconstruction of Finance Theory and Operations

- ❖ Positive Accounting Theory, Fair Value Accounting, Conservative Accounting, Creative Accounting
- ❖ Efficient Market Hypothesis, CAPM, Random Walk, Behavioural Finance etc.

Accounting and Finance Policies and Operations are changing.

Accounting Information Systems: Artificial Intelligence and the Emergence of FinTech : Reconstruction of Accounting Operations

Traditional methods: Manual and Separate

ERP: Integrated Accounting Information Systems – Computer Applications

Automated Accounting Information Systems – Automated ERP, Corporate Governance and Management

Roles of AI, Machine Learning, Data Analytics, Big Data, Blockchain, other emerging technologies, etc.

Accounting and Policies and Operations are changing.

Financial Analytics: Artificial Intelligence and the Emergence of FinTech : Reconstruction of Financial Operations

Traditional methods: Manual and Separate

Corporate Finance - ERP: Integrated Accounting Information Systems – Computer Applications

Financial Markets: Financial Transactions, Online Banking, Mobile Transactions, Bitcoin, International Financial Herbs,

Automated Financial Systems and Management

Roles of AI, Machine Learning, Data Analytics, Big Data, Blockchain, other emerging technologies, etc.

Financial Policies and Operations are changing.

Benefits of artificial intelligence:

- ❖ Enormous benefits in applications for the human being in all areas of life, especially in Accounting, Auditing, Finance, Banking, Insurance, etc.
- ❖ Improving efficiency, productivity, convenience, supports for all areas of activities and operations in Accounting and Finance.

Controversies in AI Relevant for Accounting and Finance:

- ❖ AI and the Accounting and Finance Law and Regulations – Legal Reforms
- ❖ AI and Ethics; Should we Change Our Values?
- ❖ Contributions or Dangers of AI to Society & Accounting and Finance?
- ❖ Divided World and Society?

Risks of artificial intelligence

- ❖ Has potential substantial disastrous risks and uncertainties for
- ❖ large unemployment, digital divide among people and nations,
- ❖ technological accidents, robots overtaking, autonomous weapons, space warfare,
- ❖ social upheavals, etc.

Adversities of AI for Accounting and Finance

- ❖ **Many Adversities of AI for Accounting and Finance, Banking, Insurance, etc.**
- ❖ **General benefits and problems of AI apply to Accounting and Finance as well.**

Artificial Intelligence: Future and Risks?

- ❖ What is our Future?
- ❖ Future of Accounting and Finance?
- ❖ Risks and Uncertainties

We don't know exactly.

Management of AI developments and uses

- ❖ Prudent management of AI developments and deployment in Accounting, Finance, Banking, etc. – individual, national and global - is necessary.
 - ❖ Agency theory, conflict of interests, information asymmetry in Accounting and Finance.
 - ❖ So a proper approach for this based on game theory is necessary. **Game theory based approach can save the world and mankind.**
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- ❖ This is a hard, problematic task.
 - ❖ ***Finally: So the future is uncertain for managing AI and Fintech in Accounting and Finance.*** Prudent management is necessary.

My Publications and Some References

❖ I have publications in these areas and can be sent by emails for distribution among participants

❖ Some References

- Bidar, F & Islam, S 2019, Digitalisation of Supply Chain Management and Firm Performance: Structural Equation Modelling and Empirical Findings, with, 2019, Nova Science Publishers, NY.
- Mueller, P & Massaron, L 2016, Machine Learning for Dummies, NJ, John Wiley & Sons.
- Russel, S & Norvig, P, 2016, Artificial intelligence: A Modern Approach, Essex: Pearson.
- Sharda, R, Delen, D and Turban, E (2021), Analytics, Data Science, & Artificial Intelligence: Systems for Decision Support, 11th edition, Pearson, Essex.
- Steven, A & Strauss L 2018, Chasing Digital, Wiley, Milton, QLD.
- Muller J & Massaron L 2018, Artificial Intelligence for Dummies, Wiley, NJ.

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❖ **Questions and comments can be sent to
me:**

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❖ **Thanks for your interest.**

❖ **Questions?**