

ARTIFICIAL INTELLIGENCE IN FINANCIAL SERVICES

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ABSTRACT

This study explores the application of Artificial Intelligence (AI) on the various financial services such as portfolio management, credit ratings, exchange rate and trading etc. which is been supported by various examples where companies have used and using AI for increasing their efficiency and to have competitive advantage.

Financial Institutions are pioneer of the application of AI in business and rate this is increasing exponentially. AI is one of the reasons for adaption of changes in financial services which finally reduces cost and help in bringing operational efficiencies.

INTRODUCTION AND BACKGROUND –

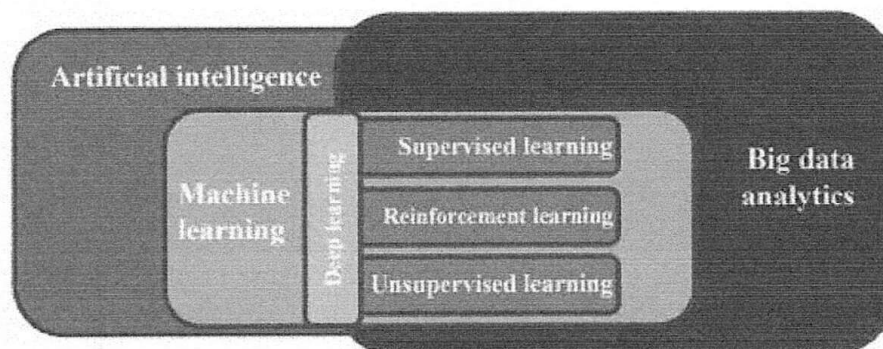
Application of computational tools to address tasks requires human sophistication is termed as “Artificial Intelligence (AI).” Existence of AI is from several years, right from the use of Computers from simplification to storing data. They have been using is diagnosis of diseases, language translation and now penetrating in financial sector.

AI is form of technology which finds loopholes and bottleneck in system, analyzes the situation and take decision based on algorithms. AI is also a self-learning system which implements decisions on its own and thus need to have human control on system.

AI is bringing rapid changes in financial operations and regulations, especially in the field of Risk Management of Projects, Fraud Detection in Banking sector, Trading Security, Portfolio management and calculation of rate of return in future by analyzing complex graphs of market.

AI uses “Big Data Analytics” which is a combination of supervised, reinforced and unsupervised learning along with machine learning. Machine learning deals with optimization, predication and categorization of data made available from past or learned through experience (without human intervention).

- a) Supervised Learning – Algorithm present in memory
- b) Unsupervised Learning – Algorithm build after experience
- c) Reinforcement Learning – Algorithm is present but can be changed as per experience. e.g. Driver less Cars



Senior MD of Accenture Finance and Risk Services, Steve Culp predicted that ‘AI will be disruptive force in Financial Services and will restructure model and process.’ But due to trend, rising competition, digitalization and rapid changing technology adopting AI is the only option available for finance sector.

Keywords –

AI, Trading, Fraud Detection, Portfolio Management, Forecasting, Banking Sector

**CURRENT APPLICATIONS OF AI-
Financial Services**

1. **Fraud Detection** –In terms of Insurance claims, Credit and Debit card defaulters, illegal transfers and transfer scams.

2. **Forecasting** – Numerical value predication to achieve maximum impact on minimum cost, promotion predication, demand prediction.
3. **Analysis of large volume data** –Analysis of huge data related to help desk, news articles and complex graphs of stock market along with calculation and prediction of expected risk and return.
4. **Screening** – Credit model for business load, home loan, credit card load and thus reduces clerical workload
5. **Portfolio Management** – To establish optimal investment strategies. Use to robo-advisory services enhances the recommendation of stocks in portfolio.

E.g.1. Use of AI by Schwab Intelligent Portfolios (2017) and Betterment (2007) companies to provide optimal portfolio choice and automated rebalance.

E.g. 2. Uses of Platforms/Software's like NEAT and BOLT by NSE and BSE respectively helps to form graphs within seconds, can be a form of AI used by India.

BANKING SECTOR –

1. **Smart Wallets** –Smart wallets are trending in customers satisfaction and widely accepted by all service provider and even the vendors. E.g. PayTm, Paypal, PayUMoney, FreeCharge etc. This wallet reduces dependency on absolute cash and help to reach money to great levels.
2. **Voice Assisted Banking** – By voice commands and touch screens. Flexibility to choose regional language, find information and connect to various financial services. This reduces human errors and increases systematic efficiency.
3. **Block chain Hasting Payments** – Advantage in terms of real-time payment process, hastening up the procedure of payment which leads to increase in support and satisfaction.
4. **Digitalization instead Branch Lines** – Document digitalization and use to digitalization for banking process reduces the lines in branch and helps to increase productivity.

LIMITATIONS INVOLVE WITH AI-

1. **Consumer Privacy** – Various action and laws have been made and implemented across the globe related to security of customer's data. Recently, Facebook stopped using AI for clouding process after the use of data by illegal users.
2. **Technological Complexity** – Due to regular updating technology, it has become difficult to adopt a particular one for a particular task. New AI is also reducing burden of using multiple technology by one, but it require a lot of testing to be done at higher scale.

ETHICAL CONCERNS WITH AI –

- a) potential of automation technology to give rise to job losses
- b) need to redeploy or retrain employees to keep them in jobs
- c) need to eliminate bias in AI that is created by humans
- d) the effect of machine interaction on human behaviour and attention
- e) fair distribution of wealth created by machines

ADVANTAGES OF AI-

Due to use of AI following are the changes takes place in Financial Services-

1. Decision making has become quiet convenient when problem is too complicated.
2. Reduction in process time and increase in operational efficiency.
3. Initial detection of frauds and record tracking of defaulters.
4. Competitive advantage over others

CONCLUSION-

Although there are some concerns with AI but those will be resolve by the advancement and time. Overall AI has application on every activity in Financial Services which going to change face of every sector.

AI will helpful to find data, analyze data and come to a decision where humans are lacking in terms of time and complexity. It will strategies the future of Finance Sector.