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## Artificial Intelligence (AI)

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On 23 May 2023, the MFSA hosted a comprehensive workshop on Artificial Intelligence, providing an overview of the transformative technology, coupled with a case study on credit risk management.

Artificial Intelligence, often abbreviated as AI, can be defined as a branch of computer science that emulates intelligent behaviours in computer systems. It revolves around the core principle of developing machines capable of thinking and acting like humans.

AI has proven its capability to enhance process efficiency, reduce human errors, automate labour-intensive tasks and extract insights from vast datasets. A surge in adoption of AI powered tools among large enterprises is largely attributed to AI's unique ability to operate 24/7, facilitating swift decision-making without compromising precision.

The workshop also delved into common terms associated with AI, notably Machine Learning (ML) and Deep Learning (DL). ML systems can analyse historical data, detect patterns, and learning from past experiences to make predictions about the future without the need for explicit programming. Additionally, DL employs deep neural networks with multiple layers to comprehend and decipher intricate data patterns.

## Application of AI within Finance

AI applications spread across various industries, including healthcare, manufacturing, credit scoring, telecommunications and education, and others. The workshop was divided into two main sections, both focusing on AI's application in the finance industry, as described below.

### 1) Revolutionizing Financial Services through AI:

- **Asset Management:** Through the identification of signals and capturing of intricate relationships in big data, AI empowers investors to reach more informed investment decisions. It can also contribute to risk management by detecting potential issues at their inception.

- **Credit Intermediation:** AI holds the potential to reduce underwriting costs through automated credit assessments, expanding access to credit. This fosters financial inclusion and addresses the SME financing gap.
- **Algorithmic Trading:** AI-driven algorithms excel in liquidity management, efficiently matching buyers and sellers, facilitating the execution of larger orders. They also optimise order flows by identifying and capitalising on market inefficiencies.
- **Blockchain-based Finance:** Combining blockchain with AI enhances the augmentation of smart contracts, enabling real-time processing of external data. Such integration mitigates threats in decentralised finance applications and fosters autonomous chains capable of self-governance and decision-making.

## 2) Navigating Challenges and Risks in AI Adoption in Finance:

- **Governance & Accountability:** The opacity in algorithms can obscure decision-making processes. Ensuring oversight and accountability of AI systems that are outsourced will be fairly challenging unless clear lines of responsibility are established.
- **Non-finance Risks:** AI models can inadvertently perpetuate biases in training data, leading to discriminatory outcomes. Given the sensitive financial data handled by AI systems, there is a risk of data breaches and compromised privacy.
- **Complexity:** The inherent lack of transparency in how AI models generate results can conflict with regulatory and internal governance frameworks, making supervision more challenging.
- **Policy Frameworks:** The intricate and dynamic nature of AI pose challenges and incompatibilities with existing legal and regulatory frameworks.
- **Robustness & Resilience:** Dynamic market conditions and unforeseen events at both a firm and market level can lead to unpredictable behaviour in AI systems, given that they are trained on historical data.

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