

The Revolution is Here: AI and Ethics in Finance



A [survey](#) held during the pandemic found that 93% of Canadian companies experience barriers to implementing AI in an ethical and responsible way. Cost, time and lack of understanding were listed as fundamental issues. Despite the concerns, Canada's banking sector and regulators seem well positioned to support society on safe and ethical AI development.

Today, AI is everywhere and is reshaping every sector with finance being at the forefront of the new revolution. Investment banks and hedge funds use AI to optimize portfolios, ensuring maximum returns. The rise of algorithmic trading allows companies to gather and analyze vast amounts of information quickly. Banks such as RBC and TD have invested heavily in AI-driven tools to provide personalized financial advice while adhering to ethical guidelines that ensure privacy, risk reduction and fraud prevention.

AI simulates human decision-making by consuming vast amounts of data and applying algorithms that make a decision based on past decisions and results. The algorithm is tested by applying new data and measuring the machine's responses. In essence, the model "learns" the difference between good and bad decisions based on the algorithm and live human interactions.

While the power of AI to help financial organizations maintain efficiency and navigate the changing waters of the global economy is clear, there are still ongoing challenges to implementation.

What are some of the key challenges to implementing AI in the finance sector?

Bias in AI Algorithms

AI systems often reflect biases in their training data which can lead to discrimination especially in lending, credit scoring and hiring decisions. An [article](#) published in RBC Capital Markets quotes “*For Canada’s business sector to cultivate an AI ecosystem that’s free of bias, there must also be an ecosystem of responsibility, where accountability and trust are delivered in every decision.*” To remain fair, it’s critical that companies audit their AI for bias every step of the way.

Ethical AI Governance

Canadian banks have started implementing ethical AI governance frameworks to manage the risks associated with AI. Many Canadian financial organizations have developed frameworks to ensure the responsible use of AI while maintaining compliance with ethical and regulatory standards. Yet the path to responsible AI practices isn’t always clear. Developing a global collaborative approach will help by bringing more diverse voices into the issue. The finance industry should prepare for increased scrutiny of AI practices to maintain consumer trust and avoid legal penalties.

Transparency and Accountability

Many AI systems use “deep learning” making it difficult to understand how decisions are made and who is responsible for errors. With large volumes of customer data being fed into AI systems, concerns around data privacy, security and consent are escalated.

Transparency in AI decision-making has been a particular focus in Canada with financial firms encouraged to make their AI algorithms accountable to both regulators and customers. This is key to maintaining public trust, especially as AI takes on a larger role in the decision-making process.

Privacy and Cybersecurity

AI learns by consuming vast amounts of data. In the financial industry, this includes sensitive personal and financial information. Privacy and security are critical to prevent misuse and unauthorized access to personal information. Like all computer systems, AI is vulnerable to attack. Firms need to be on guard to identify any threats that may be trying to manipulate AI models leading to fraud or other criminal transactions.

Data Centre Infrastructure and Energy Capacity

AI is capable of revolutionizing industries yet there are [bottlenecks](#) with respect to critical infrastructure and energy supply. Energy demands of tech giants and AI companies are skyrocketing and global energy consumption will be impacted. Energy demand for AI infrastructure is expected to soar to more than 50 gigawatts by 2030 – the equivalent of 5 times the energy needed to power New York City today.

What are some of the initiatives that work towards developing a responsible corporate and social approach to AI practices?

- [AIDA](#): Canada's Artificial Intelligence and Data Act – A voluntary temporary code providing companies with common standards enabling them to demonstrate that they are using AI systems responsibly until formal regulations are in effect
- [PIPEDA](#): Personal Information Protection and Electronic Documents Act – This act governs data privacy in Canada and includes [principles](#) for trustworthy and responsible AI practices
- [OSFI](#): Office of the Superintendent of Financial Institutions – Issues guidelines on AI risk management in the financial sector encouraging firms to ensure fairness, accountability and compliance in AI systems

What is the future of AI in the financial and other sectors?

Canada is home to some of the world's leading AI research hubs. Institutions such as the [Vector Institute](#) and [Mila](#) are at the forefront of AI innovation. It's no secret that AI is changing our world and is here to stay. Given the tremendous power of AI and its ability to integrate into existing systems, it's essential that the human component not be forgotten. Ethical considerations in AI will also depend on human-AI collaboration where human judgment plays a key role. Rather than replace human decision-making, ethical AI should be used to augment human expertise.

The AI revolution is here. It's a transformative force affecting existing paradigms in just about every sector. For financial institutions, maintaining public trust and transparency into how AI-driven decisions are made will be critical. Long-term strategies must emphasize responsible AI development focusing on both profitability and social impact. AI has the potential to move society forward but only if done in an ethical and responsible way. It's clear that the AI revolution is moving ahead at breakneck speed in a way that continues to redefine and reinvent the essence of the financial sector.