



FINANCE INDUSTRY
ISSUE 01

How AI and Data Science Are Solving Challenges And **Transforming the Finance Industry**

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Technology adoption in the finance industry is well underway. Take banking for example, over the span of a decade, account holders have stopped physically going to their banks for day-to-day transactions. Instead they are now able to check their account balances online, apply for credit cards from their phones, deposit checks electronically, and even apply for loans—all at the click of a button. These modern solutions¹ are only made possible by modern technologies like AI and data science.

Finance and banking customers also expect more from financial institutions—and why shouldn't they? Mobile and cloud banking are an absolute must and improving customer experience via technology has also become the norm. If you're slow to respond to customers, they'll soon find somewhere else to manage their finances. We live in an on-demand, instant gratification world and this is being reflected in the financial sector too.

According to Business Insider Intelligence, AI is poised to save banks an aggregate potential of \$447 billion by 2023². This is in many ways thanks to the driving force of digital transformation that's behind the changes we've seen in the finance industry in recent years.

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What's the Finance Industry Up Against?

» **We live in a world where millions** of data points are being generated every minute. The above mentioned trends to go digital wherever possible only grow the amount of data that finance and banking institutions will have to manage. This constantly increasing volume of data brings with it many challenges. Bridging data silos and managing massive swathes of data streams are only the starting point. There's also the need for taming the immense amount of data into a useful tool and connecting various data sources, systems and formats. After all, what's the use of data if it can't tell a story to help our decision making?

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Continuing to innovate to stay ahead of the competition is also a bugbear. For this, you need to be able to see patterns clearly and quickly to identify existing problems and solve future ones that may arise.

Then comes the challenge of efficiently rolling out new technology solutions and projects. In order to do this, there's the task of finding quality, experienced engineering talent to

help keep you on the road to innovation. The increased demand for engineering talent on a global scale is a severe source of frustration for many business leaders; the supply side is struggling to keep up. This challenge is faced by every industry, not just the financial sector.

So it all sounds a bit overwhelming, right? Well, thanks to developments in data science and AI, there are novel tools and concepts to help propel innovation in the financial sector.

How Data Science and AI Can Save the Day



CONSUMER ANALYTICS

This is an informative and rapidly developing way to keep an eye on what people are buying and when, how they're behaving, and where they're located. These insights can help financial institutions to monitor and improve their services and offerings. Building intuitive dashboards can help aggregate multiple data sources and present them in one clear place to help uncover inefficiencies and increase the scalability of existing business processes.



FORECASTING

Traditional forecasting is a labor-intensive process that consumes considerable time and resources. That's because it requires many people to manually review business data, run statistical calculations, and create outlooks for different markets and regions. With AI, data can be aggregated and processed with far greater accuracy, speed, and scalability than what is humanly possible. This allows companies to improve and streamline their financial forecasting calculations.



DEEP LEARNING

Deep Learning uses neural network methods, including computational models used for algorithmic trading, price forecasting, and fraud detection. These can also help financial organizations with portfolio management, operations, risk management, credit assessments, cost optimization and customer service.



MODEL INTERPRETABILITY

Insight into model behavior is essential for safety-critical applications like those used in the finance industry. Understanding the behavior of machine learning models can help predict the price movement of stocks, and the probability of home equity line of credit default.



Operation Innovation and **Transformation**

» **Here are some real-world applications where data science and**

AI can be used to transform and advance the finance industry. These applications can be developed and deployed to help solve the most pressing challenges that the industry is facing, and to offer business leaders better data-driven insights for decision making.

BUILDING CREDIT CARD

DEFAULT MODELS

Creating better models for credit card default prediction without utilizing additional features is one useful way that machine learning can help in this area. It's possible to use deep learning models to encode temporal features that classic approaches can't facilitate during optimization.

This in turn can create a more accurate representation of customers who are likely to default on credit card payments.

Ready to hire
engineers
and build out
your high-
performing
data science
team? **Book a
call with us.**

DETECTING IDENTITY FRAUD

Creating a model to improve identity fraud detection in credit card users while maintaining variable explainability is another way that AI can transform banking.

By conducting a deep analysis of variables, it is possible to improve model accuracy and improve the detection rate for cases of identity fraud. This can save banks and finance institutions both time and money by eliminating the need for additional processes.

PROVIDING INNOVATIVE CREDIT SCORING METHODS

Traditional credit scoring requires clients to have a credit history. When they don't, they are either denied a credit card application or given excessive interest rates. Thanks to AI and data science techniques, it is possible to build alternative credit scoring systems for individuals and enterprises to assess and understand their own financial health.

Using a combination of machine learning and credit risk expertise, it is possible to build a set of models to allow for the measurement of credit health using only transactional data from bank accounts. This in turn can create scalable web applications for people and businesses to link their bank accounts and monitor their own credit health. ●

Source References

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2 <https://www.businessinsider.in/finance/news/the-impact-of-artificial-intelligence-in-the-banking-sector-how-ai-is-being-used-in-2020/articleshow/72860899.cms#:~:text=Discussions%2C%20articles%2C%20and%20reports%20about,2023%2C%20with%20the%20front%20and>