

How Credit Scoring Engines Work: A Data Science and Machine Learning Perspective

Artificial intelligence is developing in leaps today, offering huge assistance to people in all sectors of business and the economy. AI is an umbrella term describing a variety of machines and algorithms simulating human cognitive functions. With AI, computer-aided decisions are made much faster due to the considerably faster data processing speed of computer systems.

The primary benefits of the application of AI systems in the financial industry are as follows:

- automation of routine processes
- increased speed of service
- reduction of the costs for solving standard tasks
- enhanced accuracy of processing of large amounts of data
- improved quality of the client support system

In the financial sector and banking, AI denotes cutting-edge analytical technologies with immense potential that improve the payment ecosystem for everyone involved, from banks to end consumers. According to the [International Data Corporation](https://www.datrics.ai/articles/credit-scoring-using-machine-learning)

[report](#), financial companies will spend \$11 million to operate with AI and ML by 2020. By the [estimate of PricewaterhouseCoopers](#), these enterprises will get excellent returns on their investment, with AI-based developments, including underwriting and AI credit scoring Engine, able to increase the financial sector's GDP by as much as 10% in less than a decade.

The Essentials of AI-Powered Credit Scoring

AI-based credit scoring is perhaps the most promising and relevant one. In a nutshell, credit scoring represents an evaluation of how well the bank's customer can pay and is willing to pay off debt. With [2.5 billion unbanked people](#) globally and only less than one-half one half of the banked population regarded as eligible for lending, the need for smarter credit-scoring solutions is evident. Learn more about the [essentials of AI-based credit scoring here](#).

AI credit scoring decisions are based on a lot of data, such as total income, credit history, transaction analysis, work experience, and even Google Analytics. In essence, scoring represents a mathematical model based on statistical methods and accounting for a large amount of information. As a result, credit scoring using AI provides more sensitive, individualized credit score assessments based on an array of additional real-time factors, giving access to finance to more people with income potential.

How Can AI Enhance Credit Risk Assessment?

In most financial institutions, credit scoring models are still based on the scorecard approach, i.e., the dynamics characteristic for the time of their inception. A potential borrower has to possess sufficient historical data on previous borrowing behavior to be rated as "scorable." In case such historical information is absent (which is a typical situation for new customers of the banking sector), even creditworthy borrowers are denied access to credit.

Unlike traditional credit scoring methods (e.g., the scorecard method) focusing on the past performance of the borrower, AI-powered credit scoring AI credit scoring software is more sensitive to real-time indicators of the potential borrower's creditworthiness, such as the current level of income, employment opportunities, and their potential ability to earn. Thus, borrowers with high potential are included in the credit programs, while those who formally pass the conventional credit scoring assessment (e.g., credit card churners) are excluded from them. In other words, AI-based credit scoring allows precise profit predictions based on the smart AI models. <http://www.datrics.ai/articles/ai-for-credit-modelling-use-cases>

How AI is Revolutionizing the Credit Scoring Industry

Issuance of loans is always associated with risks, such as the recipient's failure to pay the loan back. Hence, the purpose of credit scoring is to minimize risk exposures, which caused a systemic problem of low access to credit finance. AI solutions transform credit scoring in many ways, signaling a paradigm shift in this aspect. Here are some evident bonuses of integrating AI into credit scoring.

Greater Customer Focus

Traditional, credit scoring methods, credit scoring methods are repeatedly criticized as outdated, to a larger degree, because of their standardization and lack of sensitivity to individual disparities and nuances. With AI introduction in credit scoring systems, banks get unique insights into their customers' financial behavior not only based on historical data but also based on the potential income forecasting. Such analyses of large-scale customer data enable greater customer segmentation and rating in terms of associated credit risk, letting financial institutions price and sell their credit products to the right categories of clients.

Greater Speed

Specifically in credit scoring, AI applications are getting increasingly popular due to their ability to speed up the process of making lending decisions without any quality or precision compromises. Traditionally, banks applied decision trees, regression, and complicated arithmetical analyses to generate the client's credit score. Today, masses of superfluous, unstructured, and partially structured data are included in into analysis (e.g., social media use, mobile phone activities, etc.) to make smarter credit-related decisions, but with the help of AI, the speed of data processing remains high.

Greater Access to Credit

With the help of data science, credit scoring has become more future-oriented in contrast to old-school past-oriented approaches. In this way, more borrowers get access to credit today (e.g., students, founders of promising businesses, and foreign residents), which stimulates their businesses business and helps them jumpstart their ideas. Getting one's first-ever credit has also become simpler, which is now done based on the AI financial projections regarding the client's income potential and employment opportunities.

Benefits for All Stakeholders

The use of AI tools for credit scoring and lending decisions can not only increase the number of customers for the bank while decreasing the risk but also helps banks

make data-driven decisions, focus on margin maximization instead of risk minimization, analyze smooth risk vs. profit curve instead of relying on pre-calculated scoring cards brackets. This is an approach that was virtually impossible before widespread implementation of AI and data gathering techniques. Both the banks and customers can benefit from adoption of AI in credit scoring: banks increase the number of customers and their profits, while the customers in need of credits get wider access to better lending products.



The Challenges of Using AI for Credit Scoring

There are some challenges that need to be addressed before AI can be fully adopted for credit scoring, including:

Data availability: AI models require large amounts of data to train. This can be a challenge for lenders, as they may not have access to the necessary data.

Interpretability: AI models can be complex and difficult to interpret. This can make it difficult for lenders to understand why a particular borrower was given a certain credit score.

Bias: AI models can be susceptible to bias if the data they are trained on is biased. This can lead to inaccurate credit scores and unfair lending practices.

How to Prepare for the Future of Credit Scoring with AI

There are a few things that lenders can do to prepare for the future of credit scoring with AI, including:

Collect more data: Lenders need to start collecting more data about their borrowers. This data can then be used to train AI models that are more accurate

and predictive.

Understand AI: Lenders need to understand better how AI works. This will help them to interpret the results of AI models and to make better decisions about who should be granted credit.

Address bias: Lenders need to address the challenges of bias in AI models. This can be done by using techniques to reduce bias in their data and by ensuring that their AI models are fair and equitable.

Datrics: Reliable Tool for Credit Risk Management

The prime focus of Datrics is to enable AI for everyone so that more people in different industries can use the power of artificial intelligence to solve financial and social issues. The company's specialists created an [end-to-end data science platform](#) enabling the creation of customized AI apps and models for all business aspects, including AI in credit scoring. Credit scoring systems by Datrics perform precise [credit risk assessments](#) and credit scoring based on masses of data, enabling accurate eligibility forecasting and smart borrower rating. Besides substantial human resource savings, the AI credit scoring systems by Datrics help banks address "bad" loans via intelligent customer segmentation and forecasting algorithms.



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AI Credit Scoring: The Future of Credit Risk Assessment

Explore the world of AI credit scoring and how it's transforming traditional credit scoring models. Learn about AI credit reports, AI score meaning, and more.

Improving Credit Scoring for the Challenger Bank in the UK

Datrics empowers risk analysts to have much easier access to the data sources, build reusable ETL processes, and do predictive analytics using state-of-the-art machine learning models.

AI for Credit Modelling Use Cases

Credit risk modeling is a commonplace technique applied by financial organizations to determine specific borrowers' risk level...

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