

Chapter 7

Creditworthiness Assessment Using Natural Language Processing

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ABSTRACT

NLP is a wide and quickly developing segment of today's new digital technology, which falls under the domain of artificial intelligence. Alternative approaches for qualifying and quantifying an individual's creditworthiness have emerged in recent years as a result of recent advancements in AI. Banks and creditors may use AI to rate potential borrowers' creditworthiness based on alternative data, such as social media messages and internet usage, such as which websites people visit and what they buy from e-commerce stores. These digital footprints may show whether or not an individual is able to repay their debts. In this chapter, how the approaches of NLP could offer financial solutions to unbanked communities is explored. This chapter includes the use of various machine learning algorithms and deep learning to find the most accurate credit score of a user. Since NLP is less intrusive than providing direct access to a person's entire contact list or a social media site, it is a more accessible way to measure risk while still having the potential to target a larger audience.

NATURAL LANGUAGE PROCESSING

Computational approaches are used to read, interpret, and generate human language knowledge in natural language processing. The aim of early computational approaches to language science was to automate linguistic structure analysis and advance fundamental technologies such as speech recognition, machine translation, and speech synthesis. One of the most important operations in the advancing machine learn-

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ing field is natural language processing (NLP). Natural Language Processing (NLP) is concerned with the use of computers to process and comprehend human text/speech, also known as Natural Languages (Julia Hirschberg, 2020).

Today's researchers are refining and applying these techniques in real-world applications, such as developing spoken dialogue systems and speech-to-speech translation engines, mining social media for health and finance information, and predicting sentiment and emotion against products and services.

CREDITWORTHINESS ASSESSMENT

Several organizations provides AI-based credit scoring applications to banks and business creditors who want to better consider the risk involved with their future borrowers. Traditional credit scoring strategies take into account prospective borrower's credit history, although this can prevent certain individuals from obtaining credit despite their ability to repay their loans as they are due.

Banks and creditors uses AI technologies to create a credit score of an individual based on alternate data, such as social media messages and Internet usage, such as which websites people visit and what they buy from e-Commerce stores. These digital footprints help to gather information regarding the probabilities and risks associated with a borrower. Data is generated through these digital footprints that may show whether or not an individual is able to repay their debts.

What Is Creditworthiness?

Creditworthiness is how a lender determines that whether you will be able to repay your debts, or how much worthy you are to receive new credit. Your creditworthiness provides you credibility to receive credit from any provider.

The creditworthiness or credit score is calculated using a number of variables, one of which is the user's repayment history. When determining the likelihood of default, certain credit firms take into account the available assets as well as the number of liabilities you have.

Key Takeaways:

- A lender's creditworthiness determines whether or not you can default on your mortgage obligations.
- Several considerations, including your debt history and credit score, go into determining your creditworthiness.
- Having on-time payments is an easy way to improve or preserve your creditworthiness.

Why is an AI-based Creditworthiness Assessment Needed?

About 90% of today's global data is generated in just the past two years alone (Niccolo Mejia, 2019). According to the most current estimates, 80% of all known data is unstructured. This massive amount of data provides useful knowledge that can be used to improve a variety of financial practices, including fraud prevention, demand forecasting, customer relationship management, and credit scoring.

Currently, financial agencies and institutions rely heavily on financial records, or creditworthiness, such as FICO scores, when assessing credit risk. About 90% of top lenders in the United States. The FICO

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