

ML and LLM Solution for Automating Credit Rating Sheets for an Investment Bank

PROBLEM STATEMENT

An Investment Banking firm faces a significant challenge in the manual generation of credit rating sheets for companies of interest. The current process is labor-intensive, time-consuming, and prone to human error, leading to inefficiencies and inconsistencies in reporting. The lack of automation limits the bank's ability to scale this process effectively and hinders their capacity to respond rapidly to market opportunities.

Advancing the Accuracy and Speed of Credit Rating with Machine Learning & LLM

Our innovative approach leverages Machine Learning (ML) and Large Language Models (LLMs) in automating and enhancing complex financial processes, to ensure accuracy, efficiency, and speed, setting new standards in the operations domain. TeraCrunch utilized its proven methodology to develop a ML and LLM driven pipeline that ingests data from the client and outputs complete rating sheets. Here is the process outline:

- **Data Ingestion:** ML algorithms, capable of accurately extracting financial data from various file formats like Excel, PDF and websites, extract necessary information, significantly reducing manual intervention.
- **Rating Sheet Generation:** LLMs are utilized to interpret complex financial narratives, ensuring nuanced and accurate completion of rating sheets, far beyond basic data analysis
- **Chart and Graph Creation:** Utilizing neural network (ML) models we create visual representations of financial data per client's chart template
- **Testing and Debugging:** The initial phase included rigorous testing against past manual sheets from the client to ensure accuracy and consistency. Our ML models continuously learn from previous outputs, progressively enhancing the accuracy and reliability of the credit rating process.

RESULTS



Efficiency Improvement: Reduction in time to generate a preliminary rating sheet by 50%, decreasing the process from 4 hours to 2 hours per company.



Accuracy Enhancement: Decrease in human error by 40%, as measured by a reduction in data discrepancies found in quarterly audits.



Productivity Increase: Free up approximately 70% of the financial analysts' time, allowing them to focus on more strategic tasks.



Faster turn-around time: Ability to process and analyze data for dozens of companies simultaneously resulted an improvement in overall turnaround time for a completed rating sheet from 1 week to a few minutes