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CSRA Score – Multidimensional Risk Assessment Including Alternative Risks for Onboarding, Portfolio Monitoring, and Collection Purpose

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Abstract **Review Article**

Companies incur huge losses due to malignant activities from diverse stakeholders. Therefore, Companies must be cautious to ensure they are dealing with a trusted credit-worthy business or partner. Such loss-making activities include transactions with fraudulent stakeholders, cyber-attacks, ESG risks, Financial default, Geopolitical risks, etc. These risks need to be evaluated in a holistic framework bringing these multidimensional factors into a single decision point.

Keywords: Business risk, stakeholders, Companies, CSRA Score.

The combination scorecard is not a linear parameter-based system but an (N*M) decision matrix. N is the number of risk factors and M1, M2,.. are the different scales (continuous or discrete depending on the parameter flag measuring the riskiness). This single score will tremendously help in making onboarding, monitoring, and collection decisions.

Field of Invention

This multidimensional model transformed into a single decision parameter helps in making a quick decision in robustly assessing a variety of risks. This score can be the true north star metric to evaluate the business risk in onboarding, real-time monitoring, and collection decisions as the underlying risk factors also have real-time changing features but the score captures them into a single decision point with CSRA Score.

Background of Invention:

There are many innovations around products and concepts of evaluating credit risks, fraud risks, compliance, and other risks in a linear or 2-dimensional scoring model to evaluate business risk, onboarding, or portfolio monitoring purposes.

Our unique product looks at risks beyond just credit, fraud, and compliance to include ESG, cyber, geopolitical, and social risks with a variety of scaling parameters all modeled into a single N*M metric pointing to a single decision scoring called the "CSRA Score". (Consolidated Stakeholder Risk Assessment).

The parameters for each of the risk variables are calculated by the system using unsupervised reinforcement learning.

Description of Invention:

- The data points about the business firmographics and transactions were taken.
- Some identified very bad and very good business entities with data parameters were identified as reference or benchmark parameters.
- Each of the credit, fraud, compliance, ESG, Cyber, geopolitical, and social risk APIs were run concurrently on the business record operating on the parameters with weight as one at the same time to calculate a risk score.

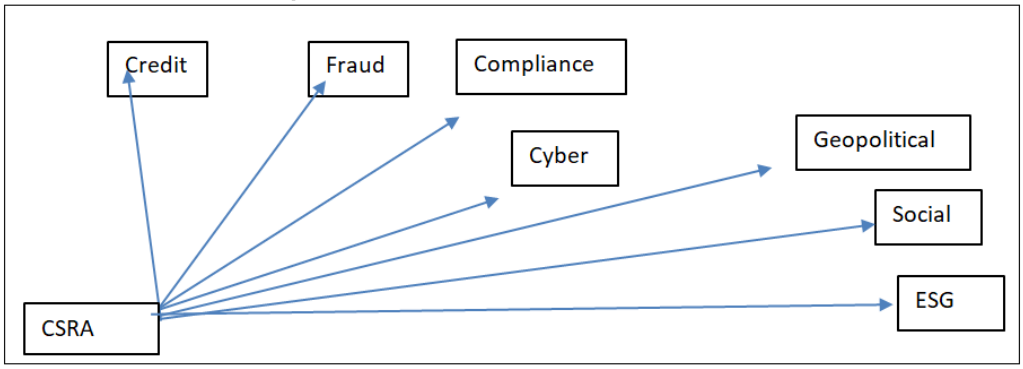
Weight of Credit =1 , Cyber =1 , etc

- Based on the difference or distance between the CSRA score and the identified bad entity instance, the parameters were adjusted.
- Similarly, the difference or distance between the CSRA score and the identified very good entity instance, the parameters were adjusted.
- Such adjustments in score lead to the optimization of the model which can segregate

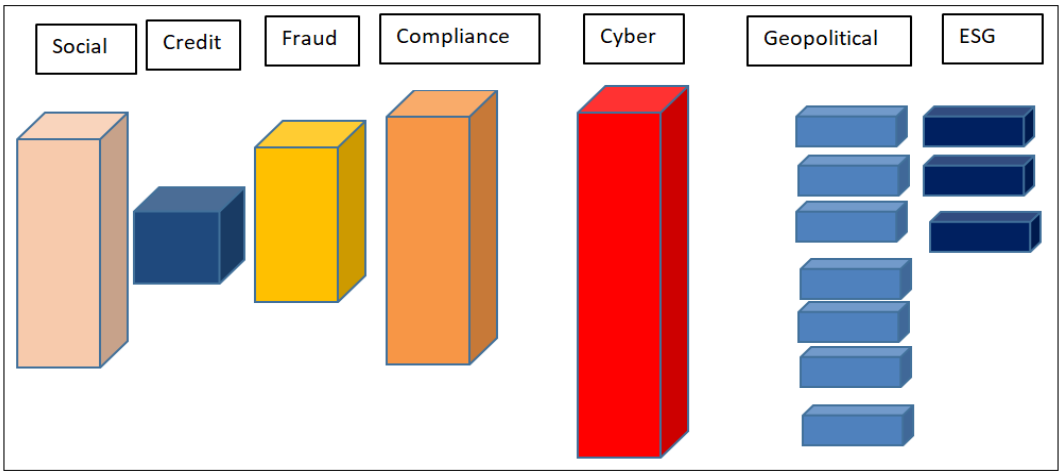
any business entity into a good or bad bucket with a measure of probability.

- We can translate the decision onto a scale and by standardizing the scale to 1000, we have a score that can be used to make a decision.

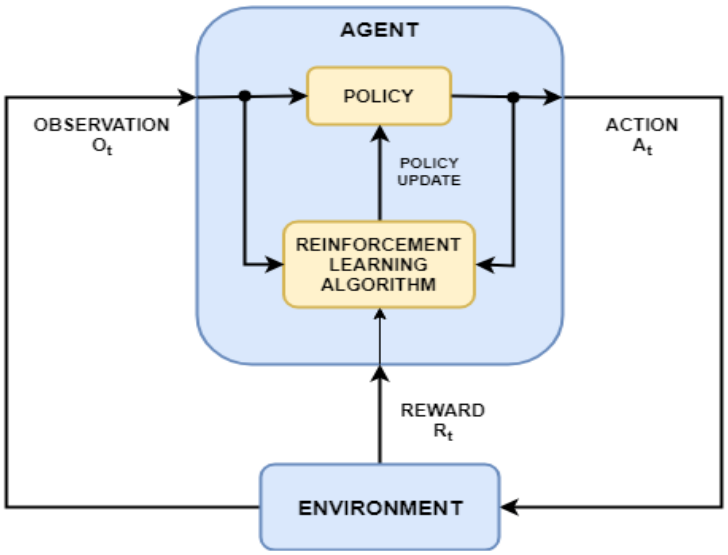
Multiple-dimensional decision risk vectors



Different Scaling for each Risk (Continuous and Discrete)- Showing as representation and actual depends on the API and its scaling



Reinforcement learning applied to a multidimensional risk model to produce a CSRA score



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