ABSTRACT

A computer-implemented method includes: receiving an inquiry request message identifying a first payment transaction having a plurality of transaction parameters and a risk score, where the risk score is generated by a machine-learning model based on the plurality of transaction parameters; for each transaction parameter of the plurality of transaction parameters, perturbing a value of the transaction parameter and re-analyzing the first payment transaction with the machine-learning model to generate a perturbed risk score based on the perturbed transaction parameter; determining at least one impact parameter from the plurality of transaction parameters by comparing the perturbed risk scores generated for each of the plurality of transaction parameters; and generating an inquiry response message based on the at least one impact parameter.

< Figure 1>