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(54) **FRAUD IMPORTANCE SYSTEM**

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(57) **ABSTRACT**

Embodiments described herein provide for a fraud detection engine for detecting various types of fraud at a call center and a fraud importance engine for tailoring the fraud detection operations to relative importance of fraud events. Fraud importance engine determines which fraud events are comparative more important than others. The fraud detection engine comprises machine-learning models that consume contact data and fraud importance information for various anti-fraud processes. The fraud importance engine calculates importance scores for fraud events based on user-customized attributes, such as fraud-type or fraud activity. The fraud importance scores are used in various processes, such as model training, model selection, and selecting weights or hyper-parameters for the ML models, among others. The fraud detection engine uses the importance scores to prioritize fraud alerts for review. The fraud importance engine receives detection feedback, which contacts involved false negatives, where fraud events were undetected but should have been detected.