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ADAPTIVE ANOMALY CORRECTION AND DYNAMIC SAMPLE BALANCING FOR DEEP INTELLIGENT CREDIT RISK ASSESSMENT FRAMEWORK



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Abstract:

With the rapid development of fintech, credit risk assessment has become a critical task for financial institutions in managing loan default risks. This paper proposes an FGA-SAE model that integrates a Stacked Autoencoder (SAE) with a sample ratio adjustment algorithm, aiming to enhance classification accuracy and robustness in credit risk assessment. Experimental comparisons demonstrate that the complete FGA-SAE model exhibits superior performance in handling data imbalance and anomaly samples. Compared to models without sample ratio adjustment and anomaly sample correction, the complete FGA-SAE model achieves significantly improved classification accuracy and faster convergence of loss values. The model effectively mitigates the impact of class imbalance on classification performance while significantly enhancing overall model performance through anomaly sample correction via the autoencoder. This study provides an innovative and efficient solution for credit risk assessment.

Keywords: Generative Adversarial Networks, Stacked Autoencoder Neural Networks, Credit Risk Assessment, Deep Learning, Big Data.

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