ACE
Engineering College
An Autonomous Institution

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DEPARTMENT OF DATA SCIENCE

Project Title: **Deep Learning for Customer Retention: An Autoencoder-Based Churn Prediction Approach**

Abstract:

Customer retention is a crucial factor for business success, as acquiring new customers is often more costly than retaining existing ones. This project leverages deep learning, specifically autoencoders, to predict customer churn by identifying anomalies in user behaviour.

The system utilizes an unsupervised autoencoder model trained on historical customer data to learn normal engagement patterns. Significant deviations from these patterns indicate potential churn risks. By analysing transactional, behavioural, and engagement data, the model helps businesses proactively identify customers likely to leave.

Traditional models struggle with high-dimensional data, but autoencoders effectively capture intricate patterns for accurate predictions. By leveraging this approach, businesses can proactively implement retention strategies, reduce attrition, and enhance profitability through data-driven insights.

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