NARASARAOPETA ENGINEERING COLLEGE (AUTONOMOUS)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

2024 -2025

Batch Number	AB4
Team Members	T. Mahith (21471A0565) K. Ravi Naik (21471A0528) K. Raju(21471A0529)
Guide	N. Vijaya Kumar M.Tech
Title	Unveiling Student Success: A Multifaceted Approach with Learning Coefficients and Beyond
Domain/Technology	Machine Learning and Deep Learning
Base Paper Link	**https://ieeexplore.ieee.org/document/10056943**
Dataset Link	**https://www.kaggle.com/datasets/aljarah/xAPI-Edu-Data**
Software Requirements	Browser: Any latest browser like Chrome Operating System: Windows 7 Server or later Python (COLAB)
Hardware Requirements	SystemType: Intel Core i5 or above RAM: 8 GB Number of cores:5 Number of Threads: 4
Abstract	The student performance is examined in this study using a number of methods of Educational Data Mining (EDM), Clustering and classification techniques are employed to classify the course as well as the performance in the entrance examination. The results obtained show that the Random Forest and XG Boost which are machine learning models outperform traditional methods for predicting student success. Moreover, CNN and LSTM Networks, which are deep learning models, improve prediction accuracy even further. Conducted through metrics like accuracy, precision, recall and F1- score, this study shows that any form of recognition of the pattern, in this case, the early one, helps to reduce failure rates to considerable extents. The results of this study suggest that there is a potential scope for further improving prediction algorithms and management of educational resources, which are of great relevance to the institutions to further the student success.

Signature of the student(s) **Signature of the Guide** **Signature of the project coordinator**