NARASARAOPETA ENGINEERING COLLEGE (AUTONOMOUS)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

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Batch Number	BB6
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Guide	Shaik Rafi M.Tech
Title	Smartphone Price Patterns Prediction Using Machine Learning Algorithms
Domain/Technology	Machine Learning
Base Paper Link	Forecasting the Prices using Machine Learning Techniques: Special Reference to used Mobile Phones | IEEE Conference Publication | IEEE Xplore
Dataset Link	Mobile Price Classification
Software Requirements	Browser: Any latest browser like Chrome Operating System: Windows 7 Server or Above Python (COLAB)
Hardware Requirements	SystemType: Intel Core i5 or above RAM: 8 GB Number of cores:5 Number of Threads: 4
Abstract	Selecting the best smartphone can be challenging due to the wide range of models available on the market. We evaluated several machine learning techniques, including Logistic Regression, Decision Trees, Random Forest, SVC, K-Neighbors Classifier, Gaussian Naive Bayes (GaussianNB), AdaBoost, Gradient Boosting, Extra Trees, Bagging Classifiers, and XGBoost. The primary objective was to identify the most effective model for price forecasting and to investigate the factors influencing phone prices. Our research offers insights to both consumers and manufacturers, helping them make more informed decisions about phone features and pricing. We emphasize the importance of using diverse datasets that accurately represent various smartphone models and pricing pointsModel performance was further enhanced through hyperparameter tuning with GridSearchCV, achieving 97% accuracy with the Decision Tree, K-Neighbors Classifier, SVC, AdaBoost, and Random Forest models. Among these, the Decision Tree and SVC was selected as the optimal models, offering a good tradeoff between accuracy, flexibility, and time complexity. ndex Terms—mobile device cost, cell phone choices, pricing determinants, device features, manufacturer choices.

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