

MIT ADT University
MIT School of Engineering
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
Mini Project I S.E (TY AIA-2) Year: 2023-24 SEM V

MINI PROJECT I SYNOPSIS

Project Group Members:

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Project Title: Student Performance Prediction

Sponsorship: NA

External Guide: NA

Internal Guide: Prof. Suruchi Deshmukh

Synopsis:

▪ Problem Statement:

In the realm of education, the diverse range of student behaviors, learning patterns, and academic requirements often pose a challenge for educators and students to improve their employability.

▪ Abstract:

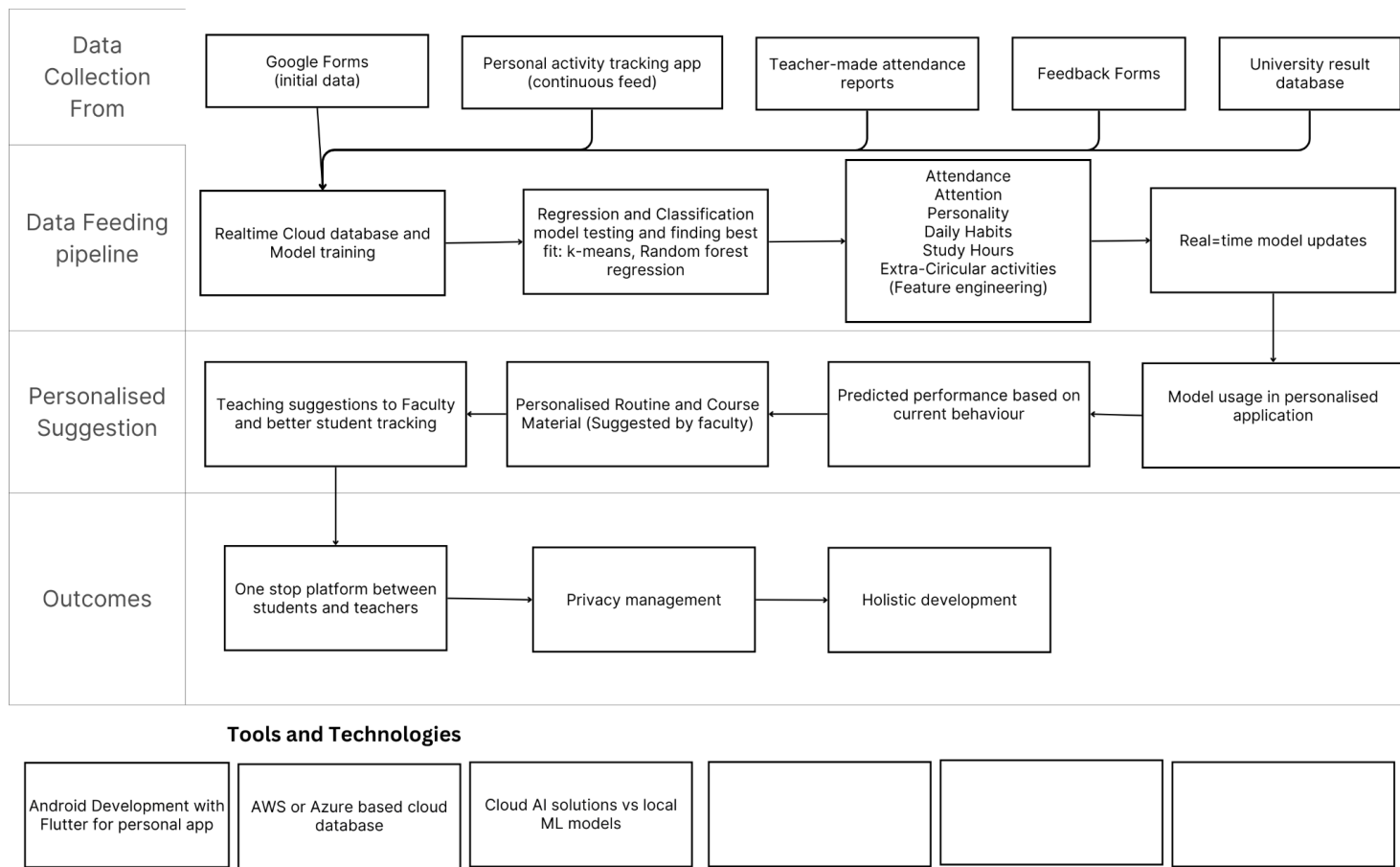
The proposed mobile app offers an innovative approach to student performance prediction and evaluation. By analyzing daily behavior data such as study habits, attendance, engagement with learning materials, and time management, the app intends to create individualized profiles for students. Through machine learning algorithms the application will highlight potential areas of success. The application will also provide practical suggestions for academic enhancement encompassing study techniques, time management strategies, subject-specific resources.

▪ Literature Survey:

Sr. No	Author	Title	Methodology	Results	Date
1	Aggarwal, D.; Mittal, S.; Bali, V Jo-Woon Chong	Significance of Non-Academic Parameters for Predicting Student	Synthetic minority oversampling,	93.8% accuracy with Random Forest	2021

		Performance Using Ensemble Learning Techniques	SVM, Decision Tree, RandomForest		
2	Zeineddine , H.; Braendle, U.; Farah, A	Enhancing prediction of student success: Automated machine learning approach.	SMOTE pre-processing method Ensemble Methods	83% Accuracy	2021
3	OuahiMariame, S.K.	Feature Engineering, Mining for Predicting Student Success based on Interaction with the Virtual Learning Environment using Artificial Neural Network.	Neural networks, SVM, Random Forest, ANN	NN had surpassed various algorithms such as Naïve Bayes, support vector machine (SVM), RandomForest, and Artificial Neural Network (ANN), to successfully evaluate the student's performance	2021
4	Ghorbani, R.; Ghousi, R.	Comparing Different Resampling Methods in Predicting Students' Performance Using Machine Learning	numerous resampling techniques	They claimed that the combination of the Random Forest classifier with the balancing technique of SVM-SMOTE provided the best results as 77.97% accuracy by employing shuffle 5-fold cross-validation tests on multiple datasets.	2020
5	Muhammad Bilal, Muhammad Omar, Waheed Anwar	The role of demographic and academic features in a student performance prediction	SMOTE and WRAPPER approach With kNN Logistic regression and SVM	SVM gave recall and accuracy of 93 and precision of 92	2022

• **Proposed System:**



• Resources:

Hardware Resources:-

1. Processor : Dual Core
2. Ram : 4Gb(minimum)
3. Phone or
4. Monitor
5. Keyboard
6. Mouse
7. Touchpad

Software Resources:-

1. Python==3.6<
2. Sciket learn
3. Matplotlib
4. Seaborn
5. Pandas
6. numpy
7. Tensorflow
8. Torch

▪ **Conclusion** :-

In conclusion, the proposed mobile app is set to revolutionize student performance prediction and evaluation. Through data analysis and machine learning, it will create personalized student profiles, highlighting areas of potential success. Moreover, the app will provide actionable recommendations for study techniques, time management, and subject-specific resources. This innovation has the potential to empower students, educators, and parents alike, ushering in a new era of academic support and success.

References:

1. [A Systematic Literature Review of Student' PerformancePrediction Using Machine Learning Techniques](#)
2. [The role of demographic and academic features in a student performance prediction](#)
3. [Comparative Study of Supervised Algorithms for Prediction of Students' Performance](#)