Enhanced Analytic System for Smart University Assistance

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Abstract: A short description of the aim and objective of the project work carried out in 3-4 lines. This part should be common to all students in the group. The font size and style will remain same from this point onwards. The font size will be 12 and font style will be Times New Roman. The line spacing will be 1.5.
This report should be prepared in A4 page format with 'default' option under 'Margin' of the 'Page Layout' tab in Microsoft Word. Word limit for this section is 80.

Individual contribution and findings: My Major Contribution/Role in the project group was creating, developing and fine-tuning of Machine Learning Models. I've adopted the professional way of developing step-wise and section-wise Machine Learning Models which helps in debugging errors, editing and implementing modifications where-ever necessary. After discussing the goals and needs of our Project, it was my goal to select the type of model and the direction to proceed to create and build a successful Machine Learning Model. After studying and much research on the project objective, I've implemented two models for two purposes - Branch Allocation Model and Career Counselling Guidance Model. For Branch Allocation, I didn't find any sort of dataset to work on, so the synthesis of dataset was done and then the method of Transfer Learning was implemented on the gathered dataset. The Final Model Accuracy of Branch Allocation model was found out to be 97.2 % using Decision Tree Algorithm. This model predicts the probable branches a candidate can opt from during branch allocation given his entrance rank and other parameters. The second model I've worked on is Career Counselling Model which predicts the type/line of work one should pursue after completion of college according to his aptitude scores, reasoning parameters etc. The Final Model is using Linear-SVM with an accuracy of 71.2%.
The Sequential Steps I've followed in developing both the models are -
Importing Datasets and Libraries -> Working on Train set and performing feature engineering and selection -> Performing Visualizations to creating a better overview of the nature of data-> Mapping Train and Test to maintain consistency of features in both datasets-> Splitting the train set into a train-validation set for development of model-> Performing hyper-parameter tuning and model optimization for better performance-> Saving the Model for future use and deployment-> Creating a ML Pipeline to compact data pre-processing and modeling-> Generation of Requirement file for dependencies.

Individual contribution to project report preparation: I've contributed towards writing down the technical and overview part of Machine Learning and its applications and steps being followed in the project report.

Individual contribution for project presentation and demonstration: I've contributed towards the overview part of Machine Learning, its applications and steps being followed, transformation and various tools being used in the project presentation.

Prof. Rajdeep Chatterjee
Full Signature of Supervisor

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Full signature of the student