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C3879C Capstone Project

Project Proposal

Student Name: __

Student ID: _18061937_____

Date: _15 April 2019_____

Overview of C3879C Capstone Project for SDAAI Students

The objectives of the Capstone Project are to:

- Expose students to the challenges, realities and considerations while working on an AI project within the industry.
- Allow students to deliver outcomes and value that companies may potentially apply and implement within their business or operating environment.

Project Proposal

Proposed Project Title (The title may be amended by SOI for internal use)	Loan Prediction
Project Objective and Motivation (Please state the purpose of the project as well as the importance to your company or organisation)	ABC Finance deals with home loans. They have offices all over the country. Their loan approval process is currently a manual process. ABC Finance wishes to automate their loan process. This will free up the loan officers' time so that they can focus on tasks that are more complex. Customers can now fill in an online application, furnishing details such as Gender, Marital Status, Education, Number of dependents, Income, Loan Amount, Credit History & the system will be able to validate if he/she is eligible for the loan in real time.
Project Description and Details (This section should include details regarding the project scope, project user and/or technical requirements, and/or	These are the steps that are required: 1. Data cleaning – missing values, duplicated data, correct errors (if any), data type conversions. 2. Data pre-processing – normalization & standardization,

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any other information that would be useful in understanding the project)	transformation, feature extraction & selection, dealing with outliers & imbalanced data 3. Splitting the data into training & evaluation sets 4. Data Visualization – to detect relationships between the variables or class imbalances / biasness and/or perform exploratory analysis 5. Decide on appropriate model(s) / algorithm(s) applicable to the problem set 6. Train the model(s) 7. Evaluate the model(s) using metrics or combination of metrics to measure its performance e.g. Confusion matrix, Sensitivity, Specificity & Detection Rate, Precision, Recall & F1 Score 8. Tune the model parameters for improved performance. These are configuration variables that are external to the model & whose values cannot be estimated from the data. 9. Make predictions using new data.
Project Deliverable (Please list or state the deliverables that is expected from the project)	Once the Loan Prediction model has been trained, the model will be deployed as a Web Service. Users of the web service will send input data to the model through a Web page and the model will send back the prediction results – Loan approved/not approved. The deliverables for this system: • Datasets used • Python Source Codes • Final Report
Skills Required	Python Programming Machine Learning Algorithms
Resources Required	Numpy, scikit-learn, Pandas, Seaborn, Matplotlib, Jupyter Notebook, Anaconda 3, Flask, Pickle
Cost, if any	