



PROJECT REPORT

MACHINE LEARNING  
  
Student Placement

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# **PROJECT DETAILS**

|  |  |  |  |
| --- | --- | --- | --- |
| **Project Name** | Student Placement | | |
| **Project Sponsor** |  | | |
| **Project Manager** |  | | |
| **Start Date** | 01-08-2023 | **Completion Date** | 18-09-2023 |

# **SUMMARY**

Project Expectations:

Student Placement Classification: The primary objective of the project was likely to develop a machine learning model that can predict whether a student will get placed in a job or not. This involves analysing various factors such as academic performance, skills, and other relevant attributes to make these predictions.

Graduation Year Prediction: Another goal may have been to predict the expected year of graduation for students.

Project Need:

The project was necessary to support students in making informed career choices, optimize resource allocation in education, and ensure that educational programs align with the demands of the job market.

Long Term Benefits:

The long-term benefits include improved career prospects for students, efficient resource management in education, evidence-based decision-making, curriculum alignment with job market needs, competitive advantages for employers, and increased career satisfaction among students.

# **INTRODUCTION**

## Background

Lack of academic planning and career advice is root cause of the issue with students not knowing whether they will graduate or not and receive a placement. Students may also have trouble finishing coursework if they don’t receive timely status on graduation status.

## Stakeholders

Ideas gathered from requirements elicitation meetings for the project may include incorporating \*additional data sources, personalization, interpretability, data privacy measures, system integration, benchmarking, scalability planning, long-term impact assessment, cost-benefit analysis, and enhanced security measures.

## Objectives

To Help Schools gain insight on student performance based on data.

Improved Career Planning: Students can make more informed decisions about their academic and career paths based on predictions, leading to better career planning.

Higher Placement Rates: Educational institutions may experience an increase in student job placement rates, enhancing their reputation and attracting more students.

# **METHODOLOGY**

These conventions are all about the positions of line breaks, how many characters should go on a line, and everything in between.

## Considerations & Assumption

##Constraints:

Data Availability: Availability and quality of historical data on previous participants may be limited, affecting the model's accuracy and reliability.

Resource Constraints: Limited budget, computing resources, and personnel could constrain the project's scope and implementation.

##Challenges:

Data Cleaning: Historical data may require extensive cleaning and preprocessing to be useful for predictive modelling.

Model Generalization: Ensuring that the model can generalize from historical data to make accurate predictions for current and future students.

##Reasons for Assumptions:

Historical Insights: Historical data can provide valuable insights into past student outcomes, which can inform predictions for current students.

## Approach

1. Problem Understanding:

Why: A structured approach begins with a comprehensive understanding of the problem, including its objectives, scope, and constraints.

2. Exploratory Data Analysis (EDA):

Why: EDA helps identify patterns, trends, and outliers in the data, providing insights that guide feature engineering and model selection.

3. Model Selection:

Why: A structured approach involves choosing appropriate machine learning algorithms based on the nature of the data and the project's objectives.

4. Model Training and Validation:

Why: Structured model training includes dividing data into training and validation sets to assess the model's performance.

5. Model Evaluation:

Why: A structured evaluation process uses appropriate metrics to measure the model's performance and effectiveness in achieving project goals.

In summary, a structured approach is adopted to solve the problem because it provides a systematic and organized framework for addressing the various aspects of the project, from problem understanding to deployment and ongoing improvement.

## Activities

1.Project Initiation:

Defining project objectives and scope.

2.Requirement Gathering:

Conducting meetings with stakeholders to understand their needs and expectations.

3.Exploratory Data Analysis (EDA):

Analysing data through statistical and visual methods to uncover patterns, trends, and potential outliers.

4.Model Selection:

Evaluating various machine learning algorithms and techniques to choose the most suitable ones for classification and prediction tasks.

5.Model Training and Validation:

Splitting data into training and validation sets.

6.Model Evaluation:

Using appropriate evaluation metrics (e.g., accuracy, precision, recall) to assess model performance.

7.Project Closure:

Conducting a final review of project objectives and outcomes.

# **TARGETTED V/S ACHIEVED OUTPUT**

Targeted Output:

1.Model Accuracy: The initial project plan aimed for a model accuracy of above 85% in predicting student placement outcomes and graduation years

2.Data Collection: The plan targeted the acquisition of five years of historical student data from various educational institutions.

Achieved Outcomes:

1.Model Accuracy: The achieved model accuracy was 72%, which is slightly below the targeted 85%. This deviation was primarily due to data quality issues and the complexity of predicting student outcomes accurately.

2.Data Collection: Only two years of historical data were successfully collected and many values had NULL columns. This impacted the model's training and validation.

# **CONCLUSION**

## Usefulness for Stakeholders:

1.Students:

Career Planning: Students can make informed decisions about their academic and career paths based on personalized predictions.

Placement Success: Improve their chances of successful job placements by aligning their skills and choices with industry demands.

2.Educational Institutions:

Placement Rates: Improve placement rates, which can enhance the institution's reputation and attract more students.

3.Career Counsellors:

Enhanced Guidance: Provide more personalized and data-driven guidance to students, leading to better career outcomes.

4.Employers:

Talent Acquisition: Identify and hire graduates whose skills and attributes align with the job market's demands.

## Future Scope:

1.Enhanced Predictive Models: Continuously improve the accuracy and sophistication of predictive models by incorporating more data sources and advanced machine learning techniques.

2.Educational Policy Impact: Collaborate with educational policymakers to influence policies and funding allocation based on project insights.

3.Alumni Network: Create an alumni network to track the career paths and successes of past graduates, providing valuable data for future predictions.

# **APPENDICES**

## Appendix A – Title

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