

AN INDUSTRY ORIENTED MINI PROJECT REPORT ON

AI Based Credit Risk Assessment for Small Business Lending

in the partial fulfillment of the requirements for the award of the degree of

BACHELOR OF TECHNOLOGY

in

CSE (AI&ML)

Submitted by

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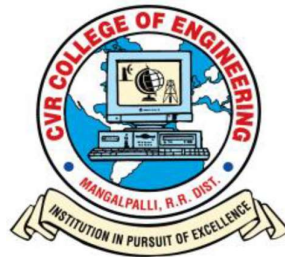
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DEPARTMENT OF CSE (AI&ML)

CVR COLLEGE OF ENGINEERING

(An Autonomous institution, NAAC Accredited and Affiliated to JNTUH, Hyderabad)

Vastunagar, Mangalpalli (V), Ibrahimpatnam (M),

Rangareddy (D), Telangana- 501 510

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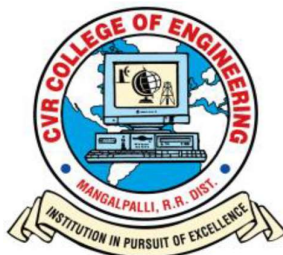
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CERTIFICATE

This is to certify that the Industry Oriented Mini Project report entitled “**AI Based Credit Risk Assessment For Small Business Lending**” bonafide record of work carried out by **V PAVANI (22B81A6628), M RAJESHWARI (22B81A6630), M SANDHYA RANI (22B81A6640) and P SUSHMITHA (22B81A6652)** submitted for the requirement of the award of **Bachelor of Technology in CSE (AI&ML)** to the CVR College of Engineering, affiliated to Jawaharlal Nehru Technological University, Hyderabad during the year 2024-2025.

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DECLARATION

We hereby declare that the Industry Oriented Mini Project report entitled “**AI Based Credit Risk Assessment For Small Business Lending**” is an original work done and submitted to CSE (AI&ML) Department, CVR College of Engineering, affiliated to Jawaharlal Nehru Technological University Hyderabad in partial fulfilment for the requirement of the award of Bachelor of Technology in CSE (AI&ML) and it is a record of Bonafide project work carried out by us under the guidance of **P. Sudheer, Assistant Professor**, Department of CSE (AI&ML).

We further declare that the work reported in this project has not been submitted, either in part or in full, for the award of any other degree in this Institute or any other Institute or University.

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TABLE OF CONTENTS

Chapter No.		Contents	Page No.
		Certificate	
		Declaration	
		Acknowledgement	
		List of Figures	
		Abstract	
1		Introduction	
	1.1	Problem Statement	1-2
	1.2	Project Objectives	2
2		Literature Survey	
	2.1	Existing work	3
	2.2	Limitations of Existing work	3-4
3		Software & Hardware specifications	
	3.1	Software requirements	5
	3.2	Hardware requirements	5
4		Proposed System Design	
	4.1	Proposed methods	6
	4.2	Data Flow Diagram	7-8
	4.3	System Architecture	8-11
	4.4	Technology Description	11-13
5		Implementation & Testing	
	5.1	Implementation	14-17
	5.2	Testing	17-19
6		Conclusion & Future Scope	20
		References:	21
		Appendix: (If any like Published paper / source code)	22-24

LIST OF FIGURES

Figure No.	Title	Page No.
4.2	Data Flow Diagram	7
4.3	System Architecture	9
5.1.1	User Interface	14
5.1.2	Handling Missing Values	15
5.1.3	Encoding and Feature Scaling	15
5.1.4	Model Training	16
5.1.5	Model Deployment	17
5.2.1	Unit Testing	18
5.2.2	Model Evaluation Metrics	18
5.2.3	User Acceptance Testing	19

ABSTRACT

In today's financial ecosystem, accurately assessing credit risk is crucial for minimizing loan defaults and improving the efficiency of loan approval processes. This project presents a web-based application that predicts the credit risk of loan applicants using historical Small Business Administration (SBA) loan data. The system employs a supervised machine learning model trained on preprocessed and feature-engineered data, with relevant numerical and categorical variables such as NAICS code, loan amount, employment figures, and repayment status.

The application is built using Python for the backend, along with Streamlit for the user interface. The model was trained using the XGBoost algorithm due to its robustness in handling mixed data types and high predictive accuracy. The final deployment enables real-time prediction of credit risk labeling applicants as either **High Risk** or **Low Risk** based on user inputs through an interactive web form.