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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DEPARTMENT OF CSE (AI&ML)

CVR COLLEGE OF ENGINEERING

(***An Autonomous institution, NAAC Accredited and Affiliated to JNTUH, Hyderabad***)
Vastunagar, Mangalpalli (V), Ibrahimpatnam (M),
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APRIL 2025

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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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ACKNOWLEDGEMENT

We are thankful for and fortunate enough to get constant encouragement, support, and guidance from all **Teaching staff of CSE (AI&ML) Department** which helped us in successfully completing this Industry Oriented Mini Project.

We are extremely thankful to our internal guide P. Sudheer**,** Assistant Professor, Department of CSE (AI&ML) for providing support and guidance, which made us to complete the Industry Oriented Mini Project on time.

We thank Dr. N.HanumanthaRao and Mr D.Ratnam Project Coordinators for their valuable guidance and support which helped us to complete the Industry Oriented Mini Project Work successfully.

We thank Professor and Head of the Department **Dr**. **R.Usha Rani,** for giving us all the support and guidance which made us to complete the Industry Oriented Mini Project duly.

We would like to express heartful thanks to **Dr. H. N. Lakshmi,** Associate Dean, ET Department for providing us an opportunity and extending support and guidance.

We thank our Vice-Principal **Prof. L. C. Siva Reddy** for providing excellent computing facilities and a disciplined atmosphere for doing our work.

We wish a deep sense of gratitude and heartfelt thanks to our Principal **Dr. Rama Mohan Reddy** and the **Management** for providing excellent lab facilities and tools.

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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.