

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY,
BELAGAVI - 590018**



**Mini Project Report
On
“INORGANIC CHEMICAL REACTION PREDICTOR”**

A report submitted in partial fulfillment of the requirements for

**MINI PROJECT (21AIMP67)
In
Artificial Intelligence & Machine Learning**

Submitted by

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|----------------------------|-------------------|
| DARSHAN | 4AL21AI007 |
| MAHAMMAD SAHIL | 4AL21AI020 |
| SHASHANK A PALAN | 4AL21AI041 |
| SHRISHANTH S SHETTY | 4AL21AI047 |

Under the Guidance of

Dr. Ramesh G

Associate Professor

Dept. of Artificial Intelligence and Machine Learning



**DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING
ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY MIJAR,**

(Unit of Alva's Education Foundation ®, Moodbidri)

Affiliated to Visvesvaraya Technological University, Belagavi,

Approved by AICTE, New Delhi, Recognized by Government of Karnataka.

Accredited by NACC with A+ Grade

Shobavana Campus, Mijar, Moodbidri, D.K., Karnataka

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ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY
MILJAR, MOODBIDRI, D.K. -574225



DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

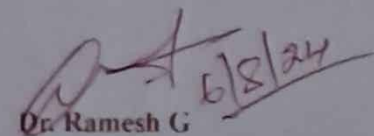
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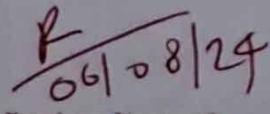
This is to certify that the Mini Project entitled “**INORGANIC CHEMICAL REACTION PREDICTOR**” has been successfully completed by

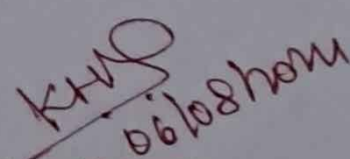
DARSHAN
MAHAMMAD SAHIL
SHASHANK A PALAN
SHRISHANTH S SHETTY

4AL21AI007
4AL21AI020
4AL21AI041
4AL21AI047

The Bonafide students of the Department of Artificial Intelligence and Machine Learning, Alva's Institute of Engineering and Technology in the **DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2023–2024. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The Mini Project report has been approved as it satisfies the academic requirements in respect of the Mini Project work prescribed for the Bachelor of Engineering Degree.


Dr. Ramesh G
Project Guide


Dr. Pradeep Nazareth
Project Coordinator


Prof. Harish Kunder
HOD, Dept. of AIML

ABSTRACT

The goal of the Chemical Reaction Predictor project is to use machine learning methods to predict the results of chemical reactions. A model that forecasts the products created from given reactants can be developed by examining a sizable dataset of known reactions. This includes gathering and sanitizing data, identifying key characteristics such as reactant properties and reaction conditions, and creating several prediction models. The project's main goal is to implement algorithms like random forests and support vector machines and thoroughly train them to provide results with 66.67% accuracy. To ensure these models are effective, we assess them using measures like accuracy, precision, recall, and F1 score. After determining the optimal model, we implement it in an intuitive interface that enables users to enter reactants and obtain predictions for the final products.