**EMAIL SPAM CLASSIFICATION USING**

**RANDOM FOREST AND XGBOOST CLASSIFIERS**

**A Project Report submitted in partial fulfillment of the requirements for the award of the degree of**

**BACHELOR OF TECHNOLOGY IN**

**COMPUTER SCIENCE AND ENGINEERING**

**Submitted by**

## **J. SAKETH, 221910307029**

## **M. SAI PAVAN NIKHIL, 221910307037**

## **N. VENKATA SAI PRASAD, 221910307041**

## **Y. NITHISH RAO, 221910307060**

**Under the esteemed guidance of**

**V. REKHA**

**Asst. Prof**



## **DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING GITAM**

**(Deemed to be University) HYDERABAD NOVEMBER-2022**

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**GITAM SCHOOL OF TECHNOLOGY**

**GITAM**

**(Deemed to be University)**



# **DECLARATION**

I/We, hereby declare that the project report entitled “**EMAIL SPAM CLASSIFICATION USING RANDOM FOREST AND XGBOOST CLASSIFIERS**” is an original work done in the Department of Computer Science and Engineering, GITAM Institute of Technology, GITAM (Deemed to be University), submitted in partial fulfillment of the requirements for the award of the degree of B.Tech. in Computer Science and Engineering. The work has not been submitted to any other college or University for the award of any degree or diploma.

Date:

**Registration No(s). Name(s) Signature(s)**

221910307029 J. SAKETH

221910307037 M. SAI PAVAN NIKHIL

221910307041 N. VENKATA SAI PRASAD

221910307060 Y. NITHISH RAO

# **DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING GITAM SCHOOL OF TECHNOLOGY**

**GITAM**

**(Deemed to be University)**



# **CERTIFICATE**

This is to certify that the project report entitled ““**EMAIL SPAM CLASSIFICATION USING RANDOM FOREST AND XGBOOST CLASSIFIERS**” is a bonafide record of work carried out by **J. SAKETH 221910307029, M. SAI PAVAN NIKHIL 221910307037, N. VENKATA SAI PRASAD 221910307041, Y. NITHISH RAO 221910307060** students submitted in partial fulfilment of the requirement for the award of the degree of Bachelors of Technology in Computer Science and Engineering.

|  |  |
| --- | --- |
| **Project Guide** | **Head of the Department** |
| **V REKHA** | **Dr S PHANI KUMAR**    **Professor** |
| **Asst. Prof** |

### **ACKNOWLEDGEMENT**

Our project would not have been successful without the help of several people. We would like to thank the personalities who were part of our project in numerous ways, those who gave us outstanding support from the birth of the project.

We are incredibly thankful to our honorable Pro-Vice Chancellor, **Prof. D. Sambasiva Rao,** for providing the necessary infrastructure and resources to accomplish our project.

We are highly indebted to **Prof. N. Seetharamaiah**, Principal, School of Technology, for his support during the project’s tenure.

We are very much obliged to our beloved **Prof. Dr. S. Phani Kumar**, Head of the Department of Computer Science & Engineering, for providing the opportunity to undertake this project and for encouragement in the completion of this project.

We would like to express our special thanks to our Project Co-ordinator  **Dr. S. Aparna,** Assistant Professor, Department of Computer Science and Engineering, School of Technology, for her time and efforts she provided throughout the year.

We hereby wish to express our deep sense of gratitude to **Mrs. V. Rekha**, Assistant Professor, Department of Computer Science and Engineering, School of Technology, for the esteemed guidance, moral support, and invaluable advice provided by him for the success of the project.

We are also thankful to all the Computer Science and Engineering department staff members who have cooperated in making our project a success. We would like to thank all our parents and friends who extended their help, encouragement and moral support directly or indirectly in our project work.

Sincerely,

J. SAKETH ( 221910307029)

M. SAI PAVAN NIKHIL ( 221910307037),

N. VENKAT SAI PRASAD (221910307041),

Y. NITISH ( 221910307060)

**TABLE OF CONTENTS**

|  |  |  |
| --- | --- | --- |
| 1. | Abstract | 1 |
| 2. | Introduction | 2 |
| 3. | Literature Review | 3 |
| 4. | Problem Identification & Objectives | 5 |
|  | 4.1 Scope and Methodology | 5 |
|  | 4.2 Problem Statement | 5 |
|  | 4.3 Existing System | 5 |
|  | 4.4 Proposed System | 6 |
|  | 4.5 Software Requirements | 6 |
|  | 4.6 Hardware Requirements | 6 |
| 5. | System Methodology | 7 |
|  | 5.1 Architecture | 8 |
|  | 5.2 UML Diagrams | 9 |
| 6. | Overview of Technologies | 12 |
|  | 6.1 Technologies Used | 12 |
|  | 6.2 Libraries Used | 12 |
| 7. | Implementation | 16 |
|  | 7.1 Coding | 17 |
|  | 7.2 Testing | 26 |
| 8. | Results & Discussions | 31 |
| 9. | Conclusion & Future Scope | 32 |
| 10. | References | 33 |

**LIST OF FIGURES**

|  |  |  |
| --- | --- | --- |
| 1 | System Architecture | 8 |
| 2 | Use Case Diagram | 9 |
| 3 | Activity Diagram | 10 |
| 4 | Class Diagram | 11 |