Mini-Project Proposal
on
INTRUSION DETECTION SYSTEM USING MACHINE LEARNING TECHNIQUES

ABSTRACT

The rapid development and massive usage of internet is increased as the number of people connecting to the network. The need to secure the network also increased. Intrusion Detection System (IDS) is a cyber security technique, monitors the state of software and hardware running in the network. An IDS is used to analyze, protect the system and predict the behaviour of the system.

The main purpose of the system is to develop an Intrusion Detection System that monitors and analyses data to detect intrusions in the system. Intrusion Detection Systems are also able to diagnose network traffic. They attempt to learn from labelled or unlabelled records of network traffic to learn behaviour of normal and attack traffic. Intrusion Detection System still faces the challenges in improving the detection accuracy.

In this project we are trying to solve this problem using various Machine Learning algorithms like XG-Boost(Extreme Gradient Boosting) and LSTM(Long Short Term Memory), which can predict the type of network attack. The dataset used to predict intrusions contains variety of intrusions in the network. This system uses NSL-KDD as the benchmark dataset.

1. **System Requirements:**

Software Requirements:

- Software : Jupyter notebook
- Programming language : Python
- Operating System : Windows 7 and above (using windows 11)

Hardware Requirements:

- Hard Disk Drive : 500 GB(using 512 GB)
- Processor : using core i5
- RAM : using 8GB

2. **Particular of Student/(s)**:

Team No: 4				
S. No.	**Name**	**Roll No.**	**Gender (M/F)**	**CGPA (Up to previous Semester)**
1.	KOMMADDI VAMSI MOHAN REDDY	19091A05H3	M	9.1
2.	AKASAM SAI THANU SREE	19091A05C7	F	7.3
3.	L. VASAVI	19091A05H4	F	7.3

3. **Project Duration (in months) :** 3 months

4. **Work Plan**(including detailed methodology and time schedule):

Project discussion and literature	:	1 week
Review Presentation	:	1 week
Design	:	10 days
Software Requirement & Specification Document	:	4 days
Implementation	:	5 weeks
Testing and updation	:	2 week
Project Release	:	1 week

5. Declaration by student/s:

We hereby declare that the project work entitled **"INTRUSION DETECTION SYSTEM USING MACHINE LEARNING TECHNIQUES"**, we shall undertake the project strictly in accordance with the provisions specified in the project proposal with the consultation of the supervisor and we shall submit reports about the progress of the work and final report as per the format of the department of Computer Science & Engineering, RGMCET on completion of the project.

Date: (Signature of Student/s with Roll No.)

Place:

Under the Guidance of:
Dr. N MADHUSUDHANA REDDY M.Tech, Ph.D
Designation: Professor
Department: Computer Science and Engineering

Signature of Guide	**Signature of Co-ordinator**	**Signatureof HOD**
(Dr. N MADHUSUDHANA REDDY)	(Dr. M.SRAVAN KUMAR REDDY)	(Dr K SUBBA REDDY)