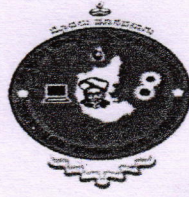


VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama”, Belagavi-560014, Karnataka



A PROJECT REPORT ON

“CYBER ATTACK DETECTION SYSTEM IN UNIVERSITY PRIVATE CLOUD USING MACHINE LEARNING”

Submitted In Partial Fulfillment of the Requirements for the Award of the Degree

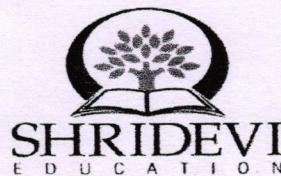
Bachelor of Engineering
In
Computer Science & Engineering

Submitted By:

AFREEN AFSHAN (1SV19CS001)
GOUDAR ROHIT RENU (1SV19CS031)
NIKKI KISHORE (1SV19CS050)
PRIYA R ACHARYA (1SV19CS053)

Under the guidance of:

Prof. CHETHAN M S B.E., M.Tech.
Assistant Professor, Dept. of CSE, SIET.



Nandini Kumbhar
PRINCIPAL
SIET. TUMKUR.

Department of Computer Science and Engineering
SHRIDEVI INSTITUTE OF ENGINEERING AND TECHNOLOGY
(Affiliated To Visvesvaraya Technological University)

Sira Road, Tumakuru – 572 106, Karnataka.

2022-23



Sri Shridevi Charitable Trust (R.)
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that, the project entitled "Cyber Attack detection System in University Private Cloud using Machine Learning" has been successfully carried out by Afreen Afshan [ISV19CS001], Goudar Rohit Renu [ISV19CS031], Nikki Kishore [ISV19CS050], Priya R Acharya [ISV19CS053], in partial fulfillment for the award of Bachelor of Engineering in Computer Science & Engineering of the Visvesvaraya Technological University, Belagavi during the academic year 2022-23. It is certified that all the corrections/suggestions indicated for internal assessments have been incorporated in the report. The project report has been approved as it certifies the academic requirements in respect of project work prescribed for the Bachelor of Engineering Degree.

Signature of Guide
Prof. Chethan M S B.E., M.Tech.,
Assistant Professor,
Dept. of CSE,
SIET, Tumakuru.

Signature of H.O.D
Dr. Basavesha D B.E., ME., Ph.D., MISTE.,
Associate Professor & HOD
Dept. of CSE,
SIET, Tumakuru.

Signature of Principal
Dr. Narendra Viswanath B.E., ME., Ph.D, MISTE., MIWS., FIV., MIE
Principal,
SIET, Tumakuru

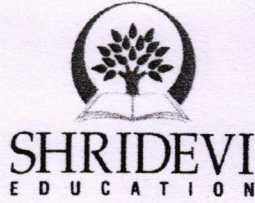
Name of the Examiners

1. Dr. Basavesha D

2. Wasim Uddin

Signature with date

PRINCIPAL
SIET, TUMKUR.



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OF PRESENTATION

This is to certify that

NIKKI KISHORE

has successfully Presented a paper entitled

**CYBER ATTACK DETECTION SYSTEM IN UNIVERSITY
PRIVATE CLOUD USING MACHINE LEARNING**

in the

**"INTERNATIONAL CONFERENCE ON INTERNET OF THINGS,
COMMUNICATION, INTELLIGENCE AND COMPUTING"**

(IC-ICIC - 2023)

held on 5th & 6th May 2023

organized by

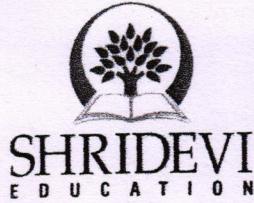
SHRIDEVI INSTITUTE OF ENGINEERING AND TECHNOLOGY,

Tumakuru, Karnataka, India - 572106

Dr. DINESHA. H. A
Chief Convener - IC Cube 2023

Dr. NARENDRA VISWANATH
Principal - SIET
Academic Senate Member, VTU.

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Sira Road, Tumakuru - 572 106. Karnataka. | Website: www.shrideviengineering.org

This is to certify that

PRIYA R ACHARYA

has successfully Presented a paper entitled

**CYBER ATTACK DETECTION SYSTEM IN UNIVERSITY
PRIVATE CLOUD USING MACHINE LEARNING**

in the

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DECLARATION

We, Afreen Afshan [ISV19CS001], Goudar Rohit Renu [ISV19CS031], Nikki Kishore [ISV19CS050], Priya R Acharya [ISV19CS053], student of VIII semester Bachelor of Engineering in Computer Science & Engineering, at Shridevi Institute of Engineering & Technology, Tumakuru, hereby declare that, the project work entitled "Cyber Attack Detection System in University Private Cloud using Machine Learning", embodies the report of our project work carried out by our team under the guidance of Prof. Chethan M S, Assistant Professor, Department of CSE, SIET, Tumakuru as partial fulfillment of requirements for the award of the degree in Bachelor of Engineering in Computer Science & Engineering of Visvesvaraya Technological University, Belagavi, during the academic year 2022-23. We further declare that the project has not been submitted for the award of any other degree.

Chethan M S
PRINCIPAL
SIET, TUMKUR.

Place: Tumakuru

Student Name & Signature

Date: 14/12/22

AFREEN AFSHAN	[ISV19CS001]	<i>Afreen Afshan</i>
GOUDAR ROHIT RENU	[ISV19CS031]	<i>Rohit Renu</i>
NIKKI KISHORE	[ISV19CS050]	<i>Nikki Kishore</i>
PRIYA R ACHARYA	[ISV19CS053]	<i>Priya R Acharya</i>

ACKNOWLEDGEMENT

A number of personalities, in their own capacities have helped us in carrying out this project work. We would like to take this opportunity to thank them all.

We feel honored to place our warm salutation to our beloved and esteemed institute “Shridevi Institute of Engineering and Technology”, Tumakuru.

We express our profound gratitude to **Dr. Narendra Viswanath**, Principal, SIET, for his moral support towards completing our project work.

We would like to thank **Dr. Basavesha D**, Head, Dept. of CSE, SIET, for his valuable suggestions and expert advice.

We deeply express sincere gratitude to our guide **Prof. Chethan M S**, Assistant Professor, Dept. of CSE, SIET, for the able guidance, regular source of encouragement and assistance throughout this project.

We whole heartedly thank, **Mr. Girish L**, Assistant Professor, and Project coordinator, Department of Computer Science and Engineering, for the support.

We would like to express our sincere gratitude to all teaching and non-teaching faculty of the department of CSE for guiding us throughout the course of this project by giving valuable suggestion and encouragement.

We would like to thank our parents and friends who supported us for the successful completion of this project work.

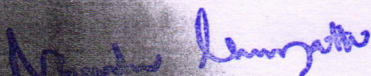
Project Associates

AFREEN AFSHAN [ISV19CS001]

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ABSTRACT

Cyber security is evolving and the rate of cybercrime is constantly increasing. Sophisticated attacks are considered as the new normal as they are becoming more frequent and widespread. This constant evolution also calls for innovation in the cyber security defense. There are existing solutions and combinations of these methods are still widely used. Network Intrusion Detection and Prevention Systems (IDS/IPS) monitor for malicious activity or policy violations. Signature Based IDS relies on known signatures and is effective at detecting malwares that match these signatures. Behavior-based IDS, on the other hand, learns what is normal for a system and reports on any trigger that deviates from it. Both types, though effective, have some weaknesses.

Several supervised learning algorithms, such as decision trees, support vector machines, or deep neural networks, can be employed to detect and classify botnet traffic accurately. The model is trained on labeled datasets containing both botnet and legitimate traffic samples, allowing it to learn the distinguishing characteristics of botnet behavior.

The proposed cyber-attack detection system offers a proactive defense mechanism against botnet attacks, enhancing the security posture of university private cloud infrastructures. By employing machine learning algorithms, it provides the ability to detect botnet activities in near real-time, minimizing potential damage and data breaches.

4.

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N. Srinivas Kumar
PRINCIPAL
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