

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
"Jnana Sangama", Belagavi-560014, Karnataka



PROJECT (PHASE I) REPORT ON

"Applied machine learning predictive analytics to SQL injection attack detection and prevention"

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE INTERNSHIP

**BACHELOR OF ENGINEERING
IN
INFORMATION SCIENCE & ENGINEERING**

Submitted By

YASHASWINI KN(1SV18IS001)

SINCHANA KM(1SV19IS018)

NISHMA MN(1SV19IS011)

HAMEEDA BANU (1SV19IS006)

Under the guidance of

Dr. Suhas G K

Assistant Professor, HOD Dept. of ISE.



**SHRIDEVI
EDUCATION**

Department of Information Science and Engineering

SHRIDEVI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Affiliated To Visvesvaraya Technological University)

Sira Road, Tumakuru – 572106, Karnataka.

2022-2023

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DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that, Internship project report of entitled "Applied machine learning predictive analytics to SQL injection attack detection and prevention" has been successfully carried out by YASHASWINI KN, SINCHANA KM, NISHMA MN, HAMEEDA BAANU[1SV18IS001,1SV19IS018,1SV19IS011,1SV19IS006], in partial fulfillment for the Internship project report of Bachelor of Engineering in Information 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 Internship - Project report has been approved as it certifies the academic requirements in respect of Internship-Project work prescribed for the Bachelor of Engineering Degree.

Suhas G.K

Signature of Guide

Dr. Suhas G K_{BE, MTech, PhD}
Ass. Professor & HOD Dept ISE
SIET, Tumakuru

Suhas G.K

Signature of HOD

Dr. Suhas GK_{BE, MTech, PhD}
Ass. Professor & HOD Dept ISE
SIET, Tumakuru.

Narendra Viswanath

Signature of Principal

Dr. Narendra Viswanath M.E., Ph.D., MIE, MISTE,
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Name of the Examiners

1. *Dr. Manoj Kumar DP*

2. *Medha B*

Signature with date

Manoj Kumar DP

24/5/23

Medha B

24/5/23



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DECLARATION

I, **YASHASWINI KN, SINCHANA KM, NISHMA MN, HAMEEDA BANU** [1SV18IS001, 1SV19IS018, 1SV19IS011, 1SV19IS006], student of VIII semester **B.E** in Information Science & Engineering, at Shridevi Institute of Engineering & Technology, Tumakuru, hereby declare that, the Internship-Project work entitled “**Applied machine learning predictive analytics to SQL injection attack detection and prevention**”, embodies the report of our Internship-Project work carried out under the guidance of **Dr. Suhas G K, Assistant Professor, HOD Department of ISE, SIET, Tumakuru** as partial fulfillment of requirements for the Internship Project report in **Bachelor of Engineering in Information Science & Engineering of Visvesvaraya Technological University, Belagavi**, during the academic year **2022-23**. The Internship-Project has been approved as it satisfies the academic requirements in respect to the Internship-Project work.

Nishma Banu

Place: Tumakuru

Student Name & Signature
SHRIDEVI INSTITUTE OF ENGINEERING AND TECHNOLOGY
TUMKUR - 572106

Date: 04-05-2023

YASHASWINI KN[1SV18IS001] ... *Yashaswini*
HAMEEDA BANU[1SV19IS006] ... *Hameeda Banu*
SINCHANA KM[1SV19IS018] ... *Sinchana*
NISHMA MN [1SV19IS011] ... *Nishma*

ACKNOWLEDGEMENT

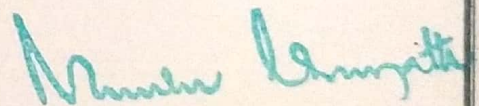
This Internship-Project will be incomplete without thanking the personalities responsible for this venture, which otherwise would not have become a reality.

We express our profound gratitude to **Dr. Narendra Viswanath**, Principal, S.I.E.T, for his moral support towards completing our Internship-Project work.

We would like to thank Head of Department **Dr. Suhas G K**, HOD Department of ISE, SIET for providing all the support and facility.

We would like to thank my guide **Dr.Suhas G K**, Assistant Professor, HOD Department of Information Science and Engineering, SIET for his help, sharing his technical expertise and timely advice.

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



By, **PRINCIPAL
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YASHASWINI KN [1SV18IS001]

SINCHANA KM [1SV19IS018]

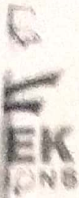
NISHMA MN [1SV19IS011]

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For ShriTEK Inno

Authorized Signatory





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TO WHOM SO EVER IT MAY CONCERN

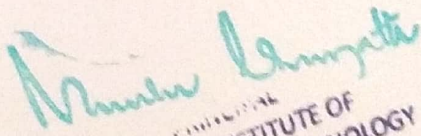
This is to certify that Ms. YASHASWINI K N bearing USN 1SV18IS001 Student of Shridevi Institute of Engineering & Technology has successfully completed her Project Work titled "Applied Machine Learning Predictive Analytics to SQL Injection Attack Detection and Prevention".

We wish every success in her career.

For ShriTEK Innovations


Authorized Signature




SHRIDEVI INSTITUTE OF
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Date: 22/05/2023

TO WHOM SO EVER IT MAY CONCERN

This is to certify that Ms. HAMEEDA BANU bearing USN 1SV19IS006 Student of Shridevi Institute of Engineering & Technology has successfully completed her Project Work titled "Applied Machine Learning Predictive Analytics to SQL Injection Attack Detection and Prevention".

We wish every success in her career.

CHAPTER 3

3.1 Existing System

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3.2 Proposed System

3.3 System Arch.

3.4 Implementation

Authorized Signature



Manish Kumar

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Abstract

These days the world is very much dependent on web applications. Hence providing security to these applications is of great importance. Information is maintained in the backend databases in the majority of applications. Among the vulnerabilities is the Structured Query Language Injection Attack (SQLIA). There are several applications to retrieve session/HTTP cookies nowadays. There is quite a range of techniques used to stop these attacks. The proposed work discusses the flaws in a few of these techniques that handle these attacks and implement an efficient hashing technique to prevent this technique. To overcome the above-mentioned attacks, the machine learning concept with the Support Vector Machine (SVM) algorithm was introduced. It is used to detect and prevent SQL injection. In this technique, the SVM algorithm will be trained with all possible malicious expressions and then generate the model.

Keywords: Support Vector Machine, Web application, Structured Query Language Injection Attack.

Nandini K. S.
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