

# A Web Application Firewall Using Reflex Agents In Reverse Proxy Architecture

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A  
Project Report  
on  
**A Web Application Firewall Using Reflex Agents In  
Reverse Proxy Architecture**

by  
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**CERTIFICATE**

This is to certify that the project report titled "**A Web Application Firewall Using Reflex Agents In Reverse Proxy Architecture**" submitted by **Mr. Abbhinav Bharadwaj [2300970100003]** to Galgotia's College of Engineering & Technology, Greater Noida, Uttar Pradesh, affiliated to Dr. APJ Abdul Kalam Technical University Lucknow, U.P. in partial fulfillment for the award of Degree of Bachelor of Technology in Computer Science & Engineering is a bonafide record of the project work carried out by them under my supervision during the year 2025-26.

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## ABSTRACT

This project proposes a novel approach to Web Application Firewalls by integrating reflex-agent-based decision making within a reverse proxy architecture. The system operates as middleware, inspecting incoming client requests and autonomously responding to potential threats in real time. Machine learning models are employed to monitor, detect, and act upon malicious patterns in HTTP payloads. As a proof of concept, two common web vulnerabilities-SQL Injection and Cross-Site Scripting (XSS) are addressed using Support Vector Machine and Random Forest classifiers, respectively. Experimental evaluation demonstrates detection accuracies of 97% for SQL Injection and 95% for XSS, indicating the effectiveness of the proposed agentic framework in enhancing adaptive web application security.

**KEYWORDS:** *Reflex Agents, Reverse Proxy, SQL Injection, XSS, Support Vector Machine, Random Forest*

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