

WebAppShield: An Approach Exploiting Machine Learning to Detect SQLi Attacks in an Application Layer in Run-time

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Abstract : In recent years, SQL injection attacks have been identified as being prevalent against web applications. They affect network security and user data, which leads to a considerable loss of money and data every year. This paper presents the use of classification algorithms in machine learning using a method to classify the login data filtering inputs into "SQLi" or "Non-SQLi," thus increasing the reliability and accuracy of results in terms of deciding whether an operation is an attack or a valid operation. A method Web-App auto-generated twin data structure replication. Shielding against SQLi attacks (WebAppShield) that verifies all users and prevents attackers (SQLi attacks) from entering and or accessing the database, which the machine learning module predicts as "Non-SQLi" has been developed. A special login form has been developed with a special instance of data validation; this verification process secures the web application from its early stages. The system has been tested and validated, up to 99% of SQLi attacks have been prevented.

Keywords : SQL injection, attacks, web application, accuracy, database

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