**Individual Report**

**Member name: Justin Young**

**Evaluated by:** [Yeshwanth Reddy Chennur](mailto:ychennur@asu.edu)

**Date: Sep 25, 2023**

**Tasks Assigned:**

* In-depth report on “Machine Learning-based web security intrusion detection system”.
* Preparing a weekly report.
* Preparing group midterm review report.
* Preparing individual midterm review report.
* Evaluate another member’s individual in-depth report and individual progress report.

**Summary:**

* Prepareda weekly report, group midterm review report, individual midterm review report, evaluated another member’s individual in-depth report and individual progress report.
* The literature review on the chosen paper focuses on comparing the performance of ML algorithms on XSS and SQL injection in web security.
  + ML algorithms analyzed: Adaboost, Random Forest, KNN, Logistic, Decision Tree, Bayesian and SVM.
* Algorithms are analyzed by their detection and accuracy rate
  + The XSS experiment utilizes a text disambiguation process on samples.
* The data set and models are optimized by reducing the capacity of parameters.
* Experiment conclusions:
  + Adaboost performed the best in SQL injection detection based on it’s recall (0.962)
  + SVM performed the best in XSS injection detection , but produced many false positives
  + Alternatively, LSTM also performed well in XSS detection, but does so at the expense of accuracy.
* Graphs, equations and other data are included to support this paper’s findings.

**Outcome:**

The research from this literature contributes to our project by analyzing the positives and negatives of various ML algorithms against some of the most prominent attacks in web security, which is highly relevant to our project in ensuring security on social media applications.

**References** *(with citation)*

C. Chen, J Zhong and W. Chen, “Machine Learning-based web security intrusion detection system”, in 2021 3rd International Academic Exchange Conference on Science and Technology Innovation, Guangzhou, China, pp. 173-177, doi: 10.1109/IAECST54258.2021.9695557

**Evaluation of Report  
  
Evaluation by:** [Justin Young](mailto:jtyoun15@asu.edu) **Date: Sept 25, 2023**

**Is the weekly member report complete with all the major result(s) of the paper(s)? If not, provide as many examples of the major result(s) missing in the written report as possible. (in bullet form). [within 100 words]**

* Yes, the weekly report is complete with all the major results.

**Is each section of the guidelines sufficiently completed? If not, point out what is missing. [Normally within 40 words].**

* Each section of the guidelines is sufficiently completed.

**Is the quality of this version of the written report satisfactory? If not, then why not? [Normally within 40 words]**

* The quality of the report is satisfactory.

**Approved by:** [Krupaben Kothadia](mailto:kkothadi@asu.edu)

**Date: 09/25/2023**