**CONCLUSION**

The healthcare industry can be benefited from machine learning especially in classification of patients condition. The algorithms proved that it is more useful in classifying the risk level of patients’ conditions in triage as critical or non\_critical. This system would help in reducing time delay to classify patients at triage in the Emergency Department of a hospital. This work proved that for the unbalanced Triage Vital Dataset, Decision Tree experimentally verified F1-score of 77.67 with a high specificity of 97.18. Moreover, this system can be useful in a pandemic situation in which all the resources are exhausted that happened during the Covid 19. This will maximize the efficiency of the health infrastructure and if the health industry takes this approach, it will reduce the workload of doctors and allow them to provide proper treatment to patients as soon as possible. Finally, it can be stated that the proposed system will benefit both doctors and patients.