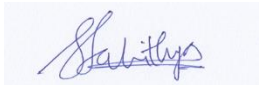


**Declaration**

I, Sahithya Soundearajah, hereby declare that the Master of Research thesis entitled “Multimodal Sentiment analysis of e-commerce Data by Reviewing Products using Machine Learning Techniques”, is no more than 20,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, and references. This research work has been solely composed by me in fulfillment of the requirements for the degree of MSc Business Analytics and submitted to Informatics Institute of Technology affiliated with Robert Gordon University, Aberdeen, Scotland.

This is an original piece of research work except where explicitly stated otherwise in the text by reference or acknowledgment under the guidance of Mr. Dinesh Asanka. I further declare that the work and results embodied in this thesis has not been submitted and will not be submitted, either in part or in full, for the award of any other degree or diploma in this institute or any other institute or university.



.....  
Signature of the student

16.05.2022

.....  
Date

Full Name of student: Sahithya Soundearajah  
Student’s Registration No: 20200380

The above Student carried out her research project under my supervision.



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Signature of the Supervisor

16.05.2022

.....  
Date

Name of the Supervisor: Mr. P.P.G Dinesh Asanka

## **Abstract**

Digital ratings are crucial in improving international customer communications and impacting consumer purchasing trends. To obtain important data from a massive number of customer reviews, they must be sorted into positive and negative opinions. Sentiment analysis is a computational method for extracting emotive information from a text. In this particular research, over 3000 reviews have been obtained from the ASOS website and classified into three different sentiments: excellent, average, and bad. The obtained reviews have been pre-processed, then feature extraction is applied to the pre-processed data to remove the redundant data. Finally, distinct machine learning algorithms will be utilized to build disparate models. This research is vital as it allows the ASOS organization to gain insight into how consumers perceive about specific issues and detect urgent issues such as delivery delays and misplaced packages in the current time period before the issue goes out of control. The key results of this research show that the Nu- Support Vector Classification model obtained the highest accuracy score of 85.99% and the lowest accuracy score of 51.47% was obtained for the AdaBoost classifier model.