**A FRAMEWORK FOR WEB OPINION MINING USING LEXICALIZED HIDDEN MARKOV MODEL (FWOMLHMM)**

**A PROJECT REPORT**

**SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF TECHNOLOGY**

**IN**

**COMPUTER SCIENCE AND ENGINEERING**

**BY**

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**UNDER THE GUIDANCE OF**

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**CERTIFICATE**

###### This is to certify that the project entitled A FRAMEWORK FOR WEB OPINION MINING USING LEXICALIZED HIDDEN MARKOV MODEL at the Department of Computer Science and Engineering, GITAM School of Technology, GITAM University Hyderabad campus by B. SAI AMRIT, NC BHARGAV, M MALLA REDDY bearing H.T-NO 2210312206, 2210312241, 2210312237 in partial fulfillment of requirement for their project work carried out under our guidance and supervision.

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**ABSTRACT**

Merchants selling products on the Web often ask their customers to share their opinions and hands-on experiences on products they have purchased. As e-commerce is becoming more and more popular, the number of customer reviews a product receives grows rapidly. This makes it difficult for a potential customer to read them to make an informed decision on whether to purchase the product. In this research, we aim to mine customer reviews of a product and extract highly specific product related entities on which reviewers express their opinions. Opinion expressions and sentences are also identified and opinion orientations for each recognized product entity are classified as positive or negative. Different from previous approaches that have mostly relied on natural language processing techniques or statistic information, we propose a novel machine learning framework using lexicalized HMMs. The approach naturally integrates linguistic features, such as part-of-speech and surrounding contextual clues of words into automatic learning. The experimental results demonstrate the effectiveness of the proposed approach in web opinion mining and extraction from product reviews.