# Automated Collection of Customer Feedback Using Facial Expression and Machine Learning Techniques

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Today, feedback of customers is crucial for businesses and organizations. It is the main method of identifying the customer service, quality and future improvements of the service. Nowadays most of the modern companies are focusing on digitalized approaches to collect customer feedback where the users can instantly rate the service. In order to take the feedback from customers in a digitalized way, there are some machines and methods available such as happy-or-not feedback machine. Analyzing the feedback is the only way of measuring the performance of the customer service officers. But the main problem of these systems is that they only allow the users to rate the service manually and such that it allows to add expressions as they wish, rendering it unreliable. Also, there is no way to measure the customer service and employees' performance by computing. There are some methods to measure the customer service, such as crucial customer service metric. This metric can be used to measure the quality of the customer service. But, there is no automated and robust way to measure the customer service. This research introduces a device that applies the theories of the customer service metrics such as customer request volume, first response time, number of replies, customer satisfaction score etc. Machine Learning techniques are used to capture facial expressions and voice detection. The device facilitates measuring of customer service performance of employees autonomously by monitoring the employee involved in customer service and rates their results. The device captures the employees' expressions and apply the values into the customer service metrics and produces the overall performance. It can measure the real rating of the customer service without the need for customer interaction. This device could be beneficial in any field where customer satisfaction is crucial. The effectiveness of this device are yet to be obtained after being applied on a real world scenario.

*Keywords*: Feedback machine, Machine learning, Customer service metric, Facial expression recognition.