

MEASURING CUSTOMER SATISFACTION USING VOCAL EMOTION RECOGNITION FOR SINHALA LANGUAGE

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Abstract

In a competitive market world, organizations try to form good customer relationships to improve their sales by improving customer satisfaction. Most of the conventional methods to measure customer satisfaction are a hassle for the customer and do not always generate accurate results. With the rapid development of technology, a new way to measure satisfaction is Speech Emotion Recognition (SER) approach. Currently, it is both a challenging and emerging area. Even though it is a growing area, there's no research about speech emotion recognition in the Sinhala language. Another issue is the lack of standard speech emotion data corpus for this area in the Sinhala language.

To overcome this limitation, this study proposes an approach to detect emotions embedded in Sinhala language speech and then the detected emotions are then mapped to a satisfaction status. The main emotion classes used in this study are happiness, anger, sadness, and emotionless state plus considering speaker of the gender. The speech data corpus is formed using Sinhala wide screen movie speech data. This study uses CNN (1D) classification to perform the emotion classification task. The analysis results show that the model's overall accuracy to identify the emotion along with gender is 62.58% and it resulted in 56% of precision, 63% of recall, and 57% of F1 score.

Keywords: Customer Satisfaction, Vocal emotion recognition, Speech Emotion, Sinhala Language, Convolutional Neural Network (CNN)