

**EMOTIONAL BASED VALL CENTER CALLS  
MANAGEMENT  
(LYCAN)**

**Viraj Sameera**

A dissertation submitted in partial fulfilment of the requirement for Bachelor of  
Science (Honours) degree in Computer Science

**School of Computing  
Informatics Institute of Technology, Sri Lanka  
in collaboration with  
University of Westminster, UK**

**2023**

## **ABSTRACT**

The average call volume for customer service centers is 30 calls per hour. They might also make good and bad decisions. Calls that don't end well could leave customers with negative opinions of the business. There are QA engineers to stop this. However, they randomly choose these calls from each customer service agent. And that won't satisfy the needs of the customers or the agents providing personalized care. Therefore, there is a chance to record both good and poor calls if there is a mechanism to trace every call that occurs between clients and agents. Agents can be rated and manage calls that didn't go well using those data. As a result, the business won't have any problems or lose money as a result of customer service calls.

The goal of this project is to design, create, and evaluate a system that can enhance call center customers' experiences based on how a representative answers the phone.

When a call is received by the call center, it anticipates both the customer's and the agent's feelings at the beginning and the end of the call. A manager will be added to that phone call if the agent did not speak clearly based on the outcome of the conversation after making a prediction. The agent is then included in the list of people who will receive training. If the agent talked clearly, their name would also be added to a different list. For that purpose, the system must identify the agent and the customer voice separately. Pyanotate open-source tool kit used for that. In this project image classification is used for predicting emotion. ResNet is used for that.

With a f1 score of 0.91 for anomaly detection, the research's output was a trained machine learning classification model that was used to find anomalies.

## **Keywords**

Emotion, Speaker Diarization, Caller Center Management System, ResNet, Lyncan, Conversation, Agent, Customer