Real time Emotion Classification on portable devices

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Abstract

AI systems these days are not very successful in understanding human emotion in real-time. It leads to negative implications on various systems like virtual assistants and chatbots as well. The sophisticated AI systems are good at emotion recognition but requires high computation power which is not an issue for cloud based applications but when it comes to portable devices like mobile phones, or embedded systems for that matter there is a lack of better performing AI. We try to address the problem by using BERT model and attaching a classifier neural network with just 2 layers. EmotionLines corpus is used to train, validate and test the architecture. We understood the issues with the dataset and solved the issues hence attaining 70% accuracy with some constraints in classification labels. For the future work, such systems can help in learning to understand the user emotions and associate them with virtual assistant errors.

1 Introduction

Due to the contextual nature of emotion in the utterance, emotion classification is difficult. There are many words that can represent different emotions depending upon the context e.g. 'What', 'How'. We choose to use EmotionLines corpus to incorporate context but as we are addressing the real time classification problem we only use prior context. We hypothesize that recent advanced NLP models like BERT can effectively incorporate prior context.

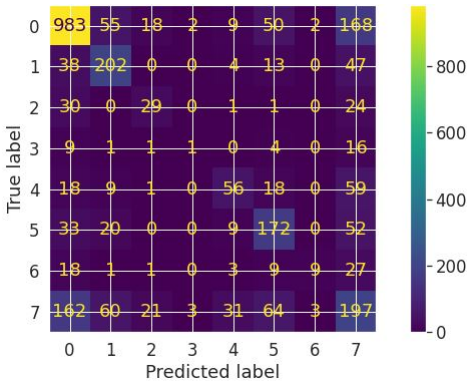
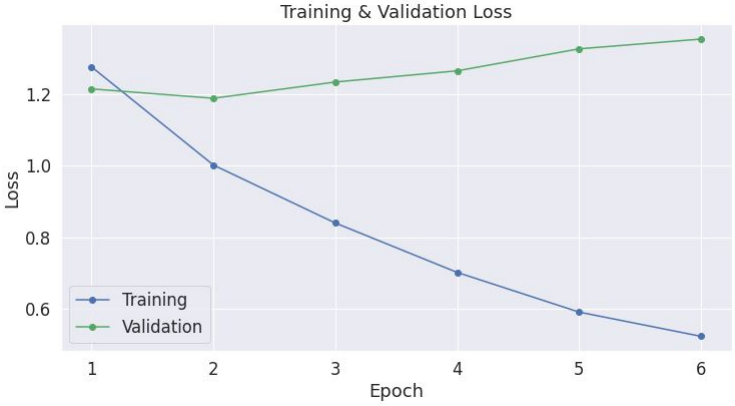


Figure 1: Confusion Matrix for BERT trained on all the data



2 Dataset

3 Method

4 Results and Discussion

5 Conclusion