1. To devise a method for generating emotionally aware responses in conversational agents.

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Conversational agent /chatbot implementation:

Initially, Implementation in two ways

1) Using a benchmark dataset with encoder decode architecture(seq2seq model) with attention mechanism or shared encoder. Here, we need to add novelty.

2) same model as point 1, by adding text-based and multi-modal emotion detection modules in the architecture.

So, we can compare response generation with and without emotion detection with the simulation or user interface of the chatbot.

1. Dataset: the empathethic dialogue dataset.

Word embeddings – count vectorizer, TF-IDF vectorizer, Glove, word2vec or any suitable

1. Techniques to be used: Deep learning algorithms.
2. Automatic and Human Performance Evaluation:

* Accuracy
* F1-score – Weighted macro and micro-averaged
* Precision - Weighted macro and micro-averaged
* Recall - Weighted macro and micro-averaged
* Training and loss curves
* Confusion matrix
* Classification report
* Jaccard Index
* Hamming Loss
* Pearson correlation coefficient – for intensity prediction
* Perplexity
* Embedding scores
* Emotional content in terms of E-F1: weighted F1 score;
* BLEU
* METEOR
* ROUGE
* word embedding metrics – (Example: Sentence Embedding Similarity- sentence embedding – sentence BERT)
* N-gram diversity - Distinct-1 and -2.
* Unigram F1-score
* Human Evaluation – based on fluency, relevance, Adequacy and emotional accuracy, emotional quotient of a response, consistency, emotional intensity.

4) To develop a simulation of an emotionally aware conservational agent for the customer service domain.

