Machine Learning Canvas

Product:	Authors:	Date:	Version:
SPEECH EMOTION RECOGNITION	TARAPUNOVA A.	05.02.2023	1

Background

Goals: Customers want a speech emotion recognition model that is accurate and reliable.

Pains: Face difficulties in understanding emotions in speech and the impact it has on customer satisfaction.

Gains: With a speech emotion recognition model, customers will be able to better understand emotions in speech, and increase customer satisfaction.

Value proposition

Value Proposition:
By leveraging the power of advanced machine learning algorithms, this technology can provide highly accurate and reliable results, helping to improve communication, increase customer satisfaction, and make better-informed decisions.

Pains Alleviated:
The traditional manual methods of understanding emotions in speech can be time-consuming, subjective, and prone to error. This pain can lead to miscommunication, dissatisfaction, and poor decision-making. Speech Emotion Recognition using Machine Learning alleviates this pain by automating the process of understanding emotions in speech, providing more accurate and reliable results in a fraction of the time.

Objectives

Key Objectives:

1. Develop a speech emotion recognition model that is accurate and reliable.

2. Offer the model as a service that is accessible to businesses and individuals.

Solution

The solution will consist of a speech emotion recognition model that is trained using a large dataset of speech samples and emotional labels. The model will be integrated into an easy-to-use web-based interface that will allow customers to input speech and receive emotional information in real-time. The solution will be designed to be scalable and able to handle a large number of customers.

Feasibility

The feasibility of the solution will depend on the availability of high-quality training data and the resources required to develop and maintain the model. The team will need to have expertise in speech processing and machine learning.

Data

The training data will be collected from a variety of sources, including public datasets, and will be labeled by knowledgeable people. The data will be pre-processed to remove any irrelevant information and will be split into training, validation, and testing sets.

Metrics

The key metrics that will be used to evaluate the performance of the model include accuracy, precision, recall. These metrics will be used to determine the effectiveness of the model in recognizing emotions in speech.

Evaluation

The model will be evaluated using both offline and online evaluation criteria. The offline evaluation will be performed on a test set of speech samples, and the online evaluation will be performed by allowing customers to input speech and receive emotional information in real-time.

Modeling

The modeling approach will be iterative and will involve training multiple models using different algorithms and hyperparameters. The model with the best performance will be selected for deployment.

Experimentation

Before release, the model will be tested using a variety of experimentation strategies, including user testing. This will help to identify any issues with the model and ensure that it is delivering the desired results.

Feedback

The system will collect feedback from customers to use for iteration. This feedback will be used to improve the model and ensure that it is meeting the needs of customers. For example it can be Google Forms or smth like this

Project

The team required for this project will include individuals with expertise in speech processing, machine learning, and web development.
The deliverables for the project will include the speech emotion recognition model, the web-based interface, and documentation. The projected timeline for the project is 6 months.