



Case study

Speech to Text & Call Summarization Using NLP

Client

Leading US-based Teledentistry company that works closely with dental health experts to help consumers via its products.

Challenges

1. The client's agents spent 5-7 mins per call for the after-call work of manually summarizing the call details. This led to low agent productivity and made the process prone to human error.
2. The challenge was to automate call classification and summarization by converting the inbound audio calls received by agents to text (STT), speech diarization, call categorization, and summary generation.
3. Identification, benchmarking, selection, and continuous evaluation of best performing deep learning models were core to solving this problem.

LTIMindtree Solution

1. LTIMindtree's solution was to benchmark cloud API services and State of the art (SOTA) model for Speech To Text (STT) on the accuracy, pricing, and response time. AWS API was finalized for converting audio streaming files to generate the transcripts and speaker diarization.
2. The summary was generated by using SOTA models like Pegasus and BART variants and calculate ROUGE scores to validate the accuracy.
3. The implementation included building training and inference pipelines for data preprocessing, custom model training & evaluation, and further exposing these models as APIs for consumption using AWS Sagemaker.
4. Tech stack used: AWS Sagemaker, Python, Jupyter Notebooks.





Benefits

01

This AI/ML pipeline automates the generation of transcripts, speaker diarization, categorization of calls, and summary creation using SOTA models and cloud API services, which will eliminate the need for manual call categorization and summarization resulting in increased operational efficiency for the agents.

02

The set-up allows for easy benchmarking of best performing model, thus enabling the most accurate results for the customer.

03

For STT, an average word error rate of 15, and for Summarization a ROUGE score of 35 have already been achieved with further improvements planned.

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