



Mindtree

A Larsen & Toubro Group Company

Speech to Text & Call Summarization using NLP



The Client

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

The Challenge

- 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.
- 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.
- Identification, benchmarking, selection, and continuous evaluation of best performing deep learning models were core to solving this problem.

Our Solution



1. Mindtree'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

Client 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 setup 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.



About Mindtree

Mindtree [NSE: MINDTREE] is a global technology consulting and services company, helping enterprises marry scale with agility to achieve competitive advantage. "Born digital," in 1999 and now a Larsen & Toubro Group Company, Mindtree applies its deep domain knowledge to 260 enterprise client engagements to break down silos, make sense of digital complexity and bring new initiatives to market faster. We enable IT to move at the speed of business, leveraging emerging technologies and the efficiencies of Continuous Delivery to spur business innovation. Operating in 24 countries across the world, we're consistently regarded as one of the best places to work, embodied every day by our winning culture made up of over 27,000 entrepreneurial, collaborative and dedicated "Mindtree Minds."

To learn more about us, visit www.mindtree.com or follow us @Mindtree_Ltd