FANO Labs 有光科技

Callinter Whitepaper

Fano Labs Artificial Intelligence Speech Analytics System

Why Callinter?

In the Customer Service Industry, it is common to see CS agents answering inquiries or promoting products and servises to their customers over the phone. Subsequently, managers are required to monitor agents' calls to ensure the quality of it, in terms of greeting, conversation interruption, incorrect/false information, and foul language involvement, etc. However, only a small percentage of these calls are really qualified due to tedious and time-consuming work. The level of monitoring can hardly meet the quality control requirement with random sampling or manual listening to every recorded call.

Failure on the part of agents to follow a mandatory script or business process leads to issues with service efficiency and customer satisfaction, and could put your business at risk if you operate in a regulated world. Especially in the financial world, compliance is crucial as it is strictly related to risk of huge fines, lawsuits, failure in following policies and regulations, among others.

With our self-developed Artificial Intelligence technologies, Fano Labs' Speech Analytics System, Callinter can help customer service managers to walk through massive calls and pinpoint the non-compliant behaviors and calls. What's more, Callinter is able to dig out the value behind the calls and provide insight for your business.

Callinter Overview

With the advanced AI technologies, Fano Labs provides smart Speech Analytics System, Callinter for customers to greatly enhanced the management capability and business development.

With our solutions, we are able to accurately detect potential risks among the calls using speech and Natural Language Processing technologies, detect and analyze the sentiment of customers to improve the service, and uncover potential sales opportunities by analyzing thousands of calls.

Technologies

Speech Recognition
We work on Speech Recognition for different languages and dialects, such as English, Mandarin and Cantonese.

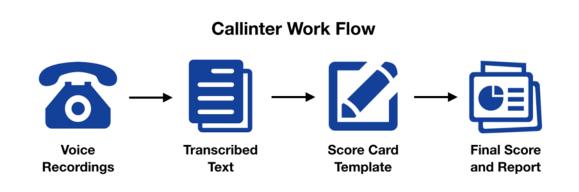### Natural Language Processing
We use Deep Learning technology to enable machines to understand and analyse human languages.

Big Data
We help enterprises analyse their voice and text data to help them understand their customers and agents.

Callinter Work Flow

Voice Recordings → Transcribed Text → Score Card Template → Final Score and Report

Transcription

Using Speech Recognition and other speech technologies, Callinter transcribes the voice data into text, and distinguishes the speakers from each other. An accurate transcription is the foundation of the further analysis.

Score Card

The score card is used to evaluate the quality of the customer service calls and the performance of the agents, consisting of many factors, such as speech patterns, high-risk behaviours, sentiment, etc.
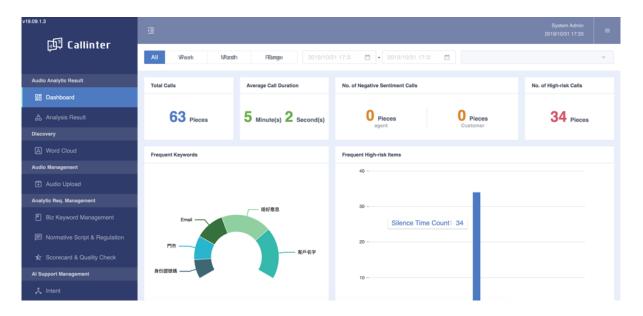
Analysis and Scoring

Based on the result of transcription, the NLP engine of Callinter will go through the text and analyze the content of the calls. According to the score card defined by the managers, a score will be given to evaluate the quality of the calls.

Reporting

A detailed report will be given to the supervisors, providing insights on the performance of the whole customer service department, and the business opportunities uncovered by the system.
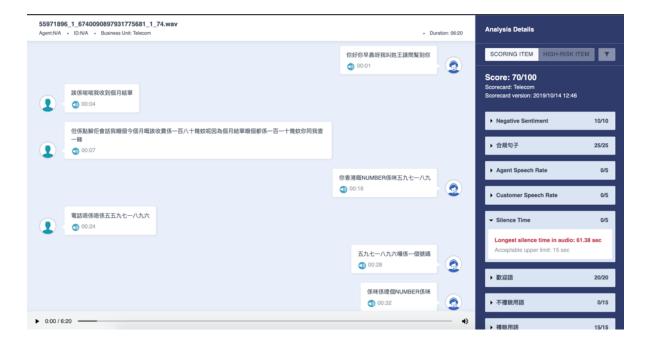
Intuitive Management Portal

Coming with an intuitive and user-friendly management portal, Callinter allows users to easily set up the system to analyze the calls in call center and get all the insights you want in the reports. You can train the AI by yourself with a simple click to recognize the intents and entities in the conversation. What's more, you are able to uncover the business opportunities from millions of calls, which you will never know without the help of Artificial Intelligence and Big Data.

Call Insights at a Glance

With the technologies of Speech Recognition and Speaker Diarization, Callinter converts the calls into graphs and text to make it easy to view and monitor. In the page of "Call Viewer", users can view the content clearly at a glance, as well as the speech patterns and high-risk behaviours detected in the call.

Key Features

Multilingual

Capability to handle customer inquiries in English, Traditional Chinese, Simplified Chinese as well as mixed languages of English and Chinese.

Intent Classification

With NLP technologies, Callinter Standard can automatically recognize the intents in the calls to understand clients' needs and requirements and detect the potential violation of compliance requirements of agents.

Speech Pattern

Users can define the speech patterns that should be followed by the agents, and track the customer service process to check whether they are speaking the correct scripts.

Sentiment Analysis

Callinter Standard can analyse the voice of both clients and agents and detect their change of emotions, in order to evaluate the service quality and agent performance, as well as the customer satisfaction.

Voice Print

Using Voice Biometrics technology, Callinter can build a data base for the voice print of the agents and identify them in the calls.

Intent Clustering

Callinter will cluster a set of objects in a way that they are related to each other, which enables the system to find out hidden characteristics of a large number of calls. The Clusters will be further analysed for self-training, and enable the system to learn new knowledges by Machine Learning.

Compliance Assurance

With compliance requirements set up in the system, Callinter Standard can monitor the behaviour of the agents and make sure all conversations are aligned with the regulations.

Silence Detection

By locating the beginning and end of the sentences, Callinter Standard can detect the silence during a conversation.

Performance Scoring

The system can analyse every call of the agents and rate the service quality with a pre-defined evaluation pattern.

Word Cloud

The system can detect and analyze the business keywords in the calls, and provide a word cloud for the users to uncover more business value.

User Control

Supports multiple user groups and users with different permissions to access and manage the system.

Audio Management

The administrators can easily import, export, review and manage the recordings with the provided graphic user interface.
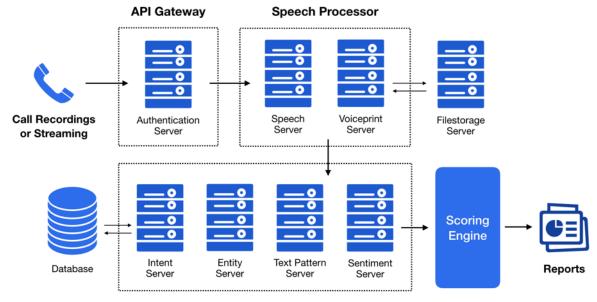
Dashboard

Monitor the activities and performance of the system in real-time, e.g. number of calls, average call duration, frequent key words and high-risk items.

Reporting

Provide insight of the system including call statistics, agent performance, client requirement and more.

System Architecture

The system is composed of several parts, each of which will process the calls with different technologies, following the work flow illustrated on page two. The diagram below shows the components of the system, and explains how each component works to get the task done.

a. Call Recordings or Streaming

The system imports the calls from the recording system if the speech analytics system works offline. When the analysis goes in real time, the system sniff the call streamings from the telephone system for further processing.

b. API Gateway

This component will pass the analysis requests received from the users to the speech and text processor for further analysis. An authentication server is included here to protect the system from unauthorized access.

c. Speech Server

Using Fano's Speech Recognition, Segmentation, Diarization and other speech-related technologies, this server is able to process the audio data and transcribe the calls into text.

d. Voiceprint Server

This component is able to create and verify the voiceprint of a certain speaker, which will contribute to the analysis of the calls.

e. Text Processor

With Fano Labs' Natural Language Processing technologies, this component is able to understand and analyze the text generated by the speech engine, including intent classification, entity detection, text/speech pattern and sentiment analysis.

f. Filestorage Server and Database

This is the component to archive the files and data, such as the STT result, voiceprint files, and so on.

g. Scoring Engine

The results of STT and NLP will be passed to the scoring engine to see how much the call is compliant with the score card set up by the managers.

h. Reports

The score and reports will be provided to demonstrate the behaviour of the agents and the performance of customer services. The managers can also view some detailed insights in the system interfaces, such as the results of STT, intent classification and sentiment analysis.

FAQ

Q: Can the system be deployed on-prem?

A: Yes, the full ownership of the AI engines and system components allow the system to be deployed either on-prem or on the cloud, depending on the requirements of different projects.

Q: How can the system accurately recognize and understand the reocrdings?

A: We build speech recognition and natural languages processing engines and connect them with Callinter system to facilitate call analysis. Before the roll-out of the system, customization and fine-tuning on the models will be conducted with data from real use cases, followed by continuous improvement when it goes online, to ensure a satisfying performance of the speech analytics system.

Q: How does the system protect data security?

A: The are several data processing stages where measures are taken to protect data security. We provide data sanitization tool which is able to locate and remove any personal information in the recordings, such as credit card numbers, phone numbers, birth date, etc. The tool can be adopted to pre-process the data before it's imported to Callinter for further analysis.

Q: What kind of analysis result can be generated by the system?

A: The system provides comprehensive statistics of frequent intents, keywords, and high-risk items among others, as well as out-of-box reports including Agent Performance Report, Call Driver Report, Trending Report, etc. We also offer professional services to customize analytics reports, uncovering more business insights for our clients.

About Fano Labs

Fano Labs is an AI company headquartered in Hong Kong and with offices in Mainland China. Specializing in AI technologies including Automatic Speech Recognition (ASR), Natural Language Processing (NLP), Text-to-Speech, and Voice Biometrics Technologies, Fano Labs helps enterprises with customer services, compliance and other lines of businesses.

With the advanced AI technologies, Fano Labs provides a smart Customer Service and Speech Analytics System, for customers from different sectors, where they can greatly enhance their management capability and have a better control over the service quality. Also, it will allow entities to reduce costs and improve the efficiency of customer service.

For more information about our solutions and organization, please visit: www.fano.ai