



INLAND REVENUE
AUTHORITY
OF SINGAPORE

Intelligent Service Quality Monitoring

The Inland Revenue Authority of Singapore (IRAS) is the main tax administrator to the Government.

They collect taxes that account for about 70% of the Government's Operating Revenue, supporting Singapore's economic and social programmes to achieve quality growth and an inclusive society.

Beyond tax collection, IRAS supports the Government in disbursing various support grants to enterprises.



"The AI Singapore team was highly professional and had strong technical skills. The apprentices who worked on the project are competent and are well-supported by a good ecosystem of AI professionals should they need guidance or advice. They delivered a workable minimum viable product of the AI solution within a short span of 7 months."

*Cheng Hui Yi
Director (Insights & Solutions)*

BACKGROUND

- IRAS handles an increasing volume of live chats by taxpayers every year. In FY19, there were approximately 88k of live chat requests from taxpayers
- Frontline supervisors monitor the quality of service rendered by inspecting live chats regularly through sampling
- To ensure consistency and quality in the delivery of services, the service quality monitoring process can be tedious and resource intensive

BUSINESS CHALLENGE

How might IRAS use AI to automate baseline quality monitoring of live chats, so that there is comprehensive review of all live chat interactions and supervisors can divert efforts to coach exception cases

OUTCOMES



The AI models were able to predict sufficiently-labelled service quality metrics with up to > 80% accuracy



The deployed solution reduces the time taken for evaluating the quality of service of the Live chats for some of the service metrics



The enhanced version of the solution is expected to allow IRAS to monitor the quality of the Live Chats in a more efficient and effective manner

AI SOLUTION DEPLOYED

IRAS defined a set of service quality metrics that were of interest and engaged data labelers to annotate the live chats

2 AI models were built:

- Text Classification model to classify each chat turn/utterance according to the service quality metrics, using contextual information from preceding and subsequent turns
- Named Entity Recognition model to pick out granular instances of each service quality metric within each chat turn

The models were deployed to automate the scoring of chat dialogues based on the metrics, and IRAS could evaluate the performance of each agent by aggregating the predicted scores