

Title of Project:

(English)	Response header generation for empathic interactions in customer support conversations
(Chinese)	於客戶支援對話透過文字生成之句首達至共情互動

Short-text based social media such as Twitter (now rebranded as X) and Weibo have become popular online platforms for customers to interact with brands. Researchers analyse customer-brand conversations on these platforms and find extensive use of emotional tones (e.g., anxious, angry, grateful, etc.) by customers. In response, brands regularly flourish their replies with empathetic expressions such as “I understand your frustration.”, “We apologize for this experience.”, etc., to try to build emotional connection with customers. Finding the right expressions, however, requires understanding customers’ feelings based on what they say. This is traditionally performed by trained customer support agents with empathic conversation skills. Given an emotionally-charged customer tweet (e.g., “The Wi-Fi is down again. What a nightmare!”), an agent can offer some intangible support to the customer’s emotional state (e.g., “Really sorry about that ...”) in addition to providing any tangible answer/support (e.g., “Please use this link to book a one-site inspection.”).

Machine learning researchers have been studying various deep learning approaches to modelling customer support conversations with an aim to generate empathic responses to customers. These approaches typically involve a separate step to recognise the emotions expressed in customer tweets and use them as conditions in the process of response generation. Experiments show that these approaches are effective to various degrees.

This research is concerned with yet another theoretically ground approach to modelling empathic customer support conversations on Twitter/X. Grounded in social psychology, this approach assumes that support agents play the role of caregiver and that customers have the need of feeling “attached” to the former. This need can be met by agents being sensitive to customer emotions. Agents would appear sensitive to the emotions by (a) offering help that relieve customers’ distress (b) show appropriate reactions to customer emotions. Although the latter form of “help” is intangible, it nevertheless fulfil the need of feeling attached in customers. Furthermore, we postulate that the agent’s emotional expression should match the customer’s in strength or explicitness during a particular exchange.

Although there have been attempts to generate empathic responses in customer support conversations, their focuses are mainly on predicting the appropriate type of emotion or intent of a response, but not necessarily the strength or explicitness of the emotion/intent involved.

We aim to incorporate emotion explicitness in a machine learning model of empathic customer support conversations which can support the generation of appropriate responses.

The proposed research extends previous work on empathic chatbots which are increasingly deployed in various services and industries including business, healthcare, education, etc. Endowing chatbots with human-level empathy has proved to be important and challenging. The aim of this research is to evaluate the efficacy of matching emotion intensity between humans and chatbots during customer support conversations.