LITERATURE SURVEY

AI BASED DISCOURSE FOR BANKING INDUSTRY

Team Leader : James Saloman J

Team Members : Keerdhana K

Prathab J

Swathi K

Literature review on chatbot in the financial industry

A chatbot—also known as a machine conversation system virtual agent, dialogue system, or chatterbot—is a software program that interacts with users using natural language (Ciechanowski et al., 2019). According to how chatbots are programmed, they can be categorised into two main types: rule-based and self-learning chatbots (Khan, Ranka, Khakare, & Karve, 2019). The first type normally has specific keywords or scenarios that are built on previous interactions with customers. As the solutions offered by this type are limited to given key words or scenarios, when customers need to enquire beyond that defined set of interactions, they need to use other self-service options or contact a human agent (Efraim, Maraev, & Rodrigues, 2018). The second type answers questions based on trained data—even when questions are beyond the predefined keywords or scenarios. This type depends on a significantly large amount of conversational data to train, as well as advanced algorithms such as AI or machine learning (MI) technologies to interact with users (Brandtzaeg & Følstad, 2017).

With the advancement of chatbot technology and expansion of the chatbot-related market, chatbot services are used in diverse domains and research has been actively conducted on chatbot technology and their use.

Chatbots are often used as tools for advertising in advanced stages of personalised advertising (Van den Broeck et al., 2019). The impact of chatbots on customer satisfaction has also been analysed, and the results indicate that accuracy and credulity of communication via chatbots have a positive effect on customer satisfaction (Chung et al., 2018). Chatbots are have also been used in healthcare (Kretzschmar et al., 2019; Zhang, Oh, Lange, Yu, & Fukuoka, 2020), the learning domain (Fryer, Ainley, Thompson, Gibson, & Sherlock, 2017; Shaha, Pokalwar, Agrawal, Udapikar, & Dhurape, 2020), tourism (Gunawan, Putri, & Meidia, 2020; Li, Lee, Emokpae, & Yang, 2021) and others. In many industries, chatbots are mainly used for automated customer service (Følstad, Nordheim, & Bjørkli, 2018) as a part of the development of self-service technologies to replace or help human agents (Bitner, Brown, & Meuter, 2000; Meuter, Ostrom, Roundtree, & Bitner, 2000; Ostrom, Fotheringham, & Bitner, 2019; Xueming, Siliang, Zheng, & Zhe, 2019) or to respond to the growing preference for non-face-to-face channels of millennials (Richad, Vivensius, Sfenrianto, & Kaburuan, 2019).

To be a good part of customer service, it is generally important for chatbots to respond quickly and accurately in a natural way as human like as possible. As the AI technology applied to chatbots has evolved to a point where accurate responses to new queries and natural language processing (NLP) are possible, researchers have tried to develop more efficient and accurate algorithms for chatbot learning. Shawar and Atwell (2005) developed and tested corpus-based learning techniques using several languages (English, French, African, and Arabic) for a chatbot learning algorithm. Lokman and Zain (2010) proposed a new algorithm to improve chatbots input processes by considering previous user input. Researchers have compared users' reactions when they interact with people and with machines, as chatbots basically facilitate interactions between people and machines using natural language.