Intent Classification of Users Conversation using BERT for Conversational Dialogue System

Sabyasachi Chakraborty*, Kyung Yul Ohm**, Hyojin Jeon*, Dong Hyun Kim**, Hyoung Jae Jin**

*Terenz Co., Ltd, Busan, Republic of Korea

**TLA Solution Co., Ltd, Seoul, Republic of Korea

saby9996@terenz.ai, ut010135@gmail.com, jeon@terenz.ai, ZS00387@kia-partners.com, ZS00399@kia-partners.com

Corresponding Author: saby9996@terenz.ai

***Abstract*— Intent Analysis and detection are currently getting a lot of importance for their significance in both the Industry and Academia. The intent classification relies heavily on the rapidly expanding unstructured data of microblogging networks like Twitter and Facebook. However, the work is extremely difficult because of the social media data's frequent noise and diversity. Furthermore, because labelled datasets are usually manually annotated, intent analysis frequently suffers from a lack of data. Modern language representation model BERT (Bidirectional Encoder Representation from Transformers), which accurately models' language, has recently gained interest. In this paper, we developed an Intent Classification Model using BERT for the classification of Questions received from the Users or Humans to specific intents regarding the usage of specific features and components of the car. The dataset for the Classification was developed from the Owner's Manual of the vehicles. The Classification Model was developed using BERT and produced promising results for the classification of Real Work Text into 199 different categories or Intents. The Model which was trained with 254,412 records plotted an overall categorical accuracy of 98.21%**

Keywords— Owner's Manual, Car, NLP, NLU, Chatbot, BERT

Sabyasachi Chakraborty is presently working as the Chief Technology Officer of Terenz Co., Ltd, Busan, Republic of Korea. He has previously worked as a Research Scholar at Inje University and worked on the development of Artificial Intelligence Algorithms for Healthcare and Medical Devices. He has wide range of experience in Industry and Academia. His Research Interests are Machine Learning, Artificial Intelligence, Bio Signal Processing and Brain Computer Interface

Hyojin Jeon is presently working as a Senior Researcher, at Terenz Co., Ltd, Busan, Republic of Korea. She has previously worked in vividly in Information Technology Company in Singapore. Her Research Interest is Electronics Engineering, Mechatronics Engineering and Artificial Intelligence.

Kyung Yul Ohm is presently working as a Managing Director at TLA Solution Co., Ltd, Seoul, Republic of Korea. He worked in integrated purchasing and export management for Yura Co., Ltd. and as the head of the general management team of overseas corporations of Sewon Precision Co., Ltd. His Research Interest are Automobile Design, Automobile Engineering, Self-Driving Cars and Artificial Intelligence

Dong Hyun Kim is presently working as a Director at TLA Solution Co., Ltd, Seoul, Republic of Korea. He worked as the head of planning office of Sewon Precision Co., Ltd. and has been in charge of management and new system development at TLA Solution Co., Ltd. His Research Interest are Automobile Design, Automobile Engineering, Self-Driving Cars and Artificial Intelligence

Hyoung Jae Jin is presently working as a Deputy Senior Manager at TLA Solution Co., Ltd, Seoul, Republic of Korea. He worked as maintenance guidelines engineer at Kyungjin Technical Solution and was a part of VR Team at AST Holdings Co., Ltd. His Research Interest are VR, AR, XR, MR, Automobile Engineering, Self-Driving Cars and Artificial Intelligence