

ABSTRACT

Business development always increases as human needs always increase, especially in the field of services, namely fast food restaurants. Fast food restaurants are places to eat that offer food and drinks with fast service. One of the services in fast food restaurants is drive thru, this service still uses human labor and requires a large fee. This is certainly less efficient, therefore a solution is needed to reduce costs and increase the productivity of drive thru services.

The purpose of this research is to design and apply an AI-based voice recognition system to fast food restaurant drive thru services. AI is a computer system that resembles human intelligence to increase efficiency and effectiveness in various fields, especially drive thru services. The presence of AI can help and facilitate the drive thru service order process. The voice recognition system functions to convert words into text. This system uses the Short Time Fourier Transform method. This model uses a Convolutional Neural Network(CNN) built using the Tensorflow library. The programming language used is Python to build the model. The audio sample used in this research is English.

The results of the study in the form of percentages are accuracy of 98%, precision of 98%, recall of 98%, and F1-score of 98%. The graphical results during 10 epoch training have increased in accuracy and decreased in loss. This shows that the model can predict the training data well. After that, implement the model through GUI with PyQt5 module in h5 format. The GUI will display from voice to text that has been trained by the machine learning model.

Keywords: *artificial intelligence, voice recognition, drive thru, fast food restaurant, Deep Learning, Python, Tensorflow*