ABSTRAK

Pane, Emiliza. 2023. *Implementasi Algoritma RNN dan Ekstraksi Fitur Pada Pembangunan Chatbot Pariwisata di Kota Tanjungpinang*, Skripsi. Tanjungpinang: Jurusan Teknik Infomatika, Fakultas Teknik dan Teknologi Kemaritiman, Univeristas Maritim Raja Ali Haji. Pembimbing I: Nurfalinda S.T., M.Cs. Pembimbing II: Muhamad Radzi Rathomi, S.Kom., M.Cs.

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Penelitian ini bertujuan untuk mengimplementasikan algoritma *Recurrent Neural Network* (RNN) dan ekstraksi fitur pada pembangunan chatbot pariwisata berbasis NLP di Kota Tanjungpinang. Berdasarkan hasil dari peneletian ini, algoritma RNN pada tahapan menggunakan ekstraksi fitur TF-IDF terjadi *overfitting.*. *Overfitting* terlihat dalam hasil epoch dengan adanya perbedaan yang signifikan antara performa pada data pelatihan dan data validasi. Dari penelitian ini pembangunan sistem *chatbot* dengan menggunakan algoritma RNN pada data pengujian menggunakan *confussion matrix*. Dengan memasukkan 30 kalimat uji coba didapat nilai akurasi sebesar 83%, presisi 88%, *recall* 92 %, dan *f1 score* 90%, sedangkan pada algoritma RNN+TF-IDF didapatkan nilai akurasi 60%, presisi 53%, recall 61% dan *f1-score* 56%.

ABSTRACT

Pane, Emiliza. 2023. Implementation of the RNN Algorithm and Extraction of Text Features in the Development of Tourism Chatbots in Tanjungpinang City, Thesis. Tanjungpinang: Department of Informatics Engineering, Faculty of Maritime Engineering and Technology, University of Maritim Raja Ali Haji. Advisor I: Nurfalinda S.T., M.Cs. Advisor II: Muhamad Radzi Rathomi, S.Kom., M.Cs.

This research aims to implement the Recurrent Neural Network (RNN) algorithm and feature extraction in developing an NLP-based tourism chatbot in Tanjungpinang City. Based on the results of this research, the RNN algorithm, when using TF-IDF feature extraction, experiences overfitting. Overfitting is observed in the epoch results, where there is a significant difference in performance between the training data and validation data. The accuracy on the training data keeps increasing while the accuracy on the validation data remains stagnant or even decreases. In this study, the development of the chatbot system using the RNN algorithm is evaluated on the test data using a confusion matrix. By inputting 30 test sentences, an accuracy of 83%, precision of 88%, recall of 92%, and f1 score of 90% are obtained, whereas for the RNN+TF-IDF algorithm, an accuracy of 60%, precision of 53%, recall of 61%, and f1-score of 56% are obtained.

Keywords: ***Recurrent Neural Network, chatbot, Natural Language Processing, tourism***