1. Introduction

In film credibility regarding the film industry, film reviews such as IMDb movie review sites cannot be separated because of their high credibility [1]. With the IMDb site frequently becoming a reference to rate films circulating in media with varied genres and more prominent communities to review the said film, IMDb is also becoming one factor in how the film itself has value [1]. IMDb also has a function for finding film references to watch and pulling audiences for recommended films from IMDb communities. From the survey done by [2], in film reviews, 82% adult-Americans are reading film reviews for their movies that are yet to be watched, and other surveys show that 77,5% of people of Chinese nationality read the reviews the first time before deciding what film to enjoy [2]. Therefore, positive reviews for a movie are defining factors to make the film sales increase and otherwise. Research done in [2] shows that added film valency with varied film reviews has more significant sales than little various results.

Research [1] uses IMDb dataset to determine the film's success with basic machine learning models such as Linear Regression, Logistic Regression, and Support Vector Machine (SVM) with an accuracy of 51% for Linear Regression, 42.2% for Logistic Regression, and 39% for SVM respectively. The problem in research [1] is the lack of depth on methods being restricted to only basic approaches and disadvantages showing low accuracies through sentiment classification. The topic is then further explored in research [3] as Hybrid Feature Extraction (Machine Learning and Lexicon-based methods) is studied, resulting in a decent performance increase from previous research. The showcase of best classifier performances in research [3] is 78.333% and 83.933% using Maximum Entropy classifier with different feature selection methods. Research [3] has a fair system design and used it as a blueprint to model a Hybrid Machine Learning and Lexicon feature extraction. Research [3] explores semantic orientation with Positive and Negative Count (PC/NC), Positive Connotation Count (PCC), and Negative Connotation Count (NCC) as main features extracted from the certain Lexicon. The Lexicon used in [3] is limited to 6800-word vocabulary, including connotation words. Therefore, an opportunity to widen the vocabulary range is used in this research. Publication [4] introduces additional bias reduction for sentiment analysis, suggesting methods of Bias Aware Thresholding, Sentiment-Orientation Calculator, and Proposed bias-processing strategy. Study [4] results in the best performance in the "Kitchen" dataset with 71.41 % and 0.76% PBR for the Proposed bias-processing method. Said bias-processing strategy is used in this research.

Based on the background, this paper aims to show performance comparisons of thresholds specified in the Bias Processing method in SentiWordNet Scoring calculation for determining the best threshold value in the sentiment classification IMDb reviews. This paper also aims to show individual performance comparisons of thresholds set in the Bias Processing Methods, Artificial Neural Network, and Semantic Orientation Calculator for determining the best threshold point in the sentiment classification of IMDb reviews. And also, this paper's goal aims to show the comparison between the Artificial Neural Network method and the Bias Aware Thresholding method from SentiWordNet, the Semantic Orientation Calculator (SO-Cal) Hybrid Classification of said methods with the best threshold in sentiment classification. For study limitation set for this study is that the dataset used is the "IMDB Dataset of 50K Movie Reviews," which is already available on Kaggle and has only positive and negative review labels.

The paper is organized as follows. Section 2 describes related studies done in IMDb sentiment analysis. Section 3 describes system design used, such as Artificial Neural Network and Lexicon-based research. Section 4 describes results and discussion of experiments and for the conclusion in Section 5.