1. INTRODUCTION

Social media is one of the essential aspects of daily life [1]. In addition to having their website, it is common for universities and colleges to have social media accounts to increase their popularity and share relevant information [2]. Some universities in Indonesia already have official social media accounts such as Facebook, Twitter, Instagram, and others to share the latest information and activities at the university.

Typically, social media users communicate by exchanging messages. Users can interact with posts on social media platforms like Instagram by leaving likes or comments. User engagement reflects the experience quality characterized by actor's cognitive, temporal, emotional, and behavioral investment when interacting with digital systems [3]. User engagement, such as user growth (followers) and interactions (e.g., likes, comments, shares, etc.), are crucial indicators of an organization's platform success [4]. The bigger the interaction indicator on a social media post or account, the more popular the account and may get more attention from publics who interested to follow the account. Universities that have official social media accounts can consider the user engagement aspect to determine which types of posts are most attractive to public. Users tend to have different topic preferences when consuming information on social media [5]. Several research has used topic features to predict user preferences, such as product recommendations [6]. Topics are also helpful for understanding users' preferences who aim to get higher engagement on Twitter [7]. It's essential to understand which topics to post to increase user engagement on social media platforms.

This study examines social media user engagement on university Instagram social media posts based on the post topic. Each engagement metric has its own effects, so different metrics will generate unique types of engagement and user expressions [4]. On analyzing user engagement, we observed the engagement metric based on the number views, likes, and comments for each topic on the university's Instagram posts. Meanwhile to identify topic post, we use Latent Dirichlet Allocation (LDA), which is a statistical model that has been widely used in text analysis and to identify topic [8].

The post topic identification results are utilized as features in predicting user engagement. In this work, we use Decision Tree and Random Forest algorithms to predict the user engagement level. Previous research has demonstrated that Decision Trees and Random Forest are effective classification techniques with positive outcomes [4]. In this study, Decision Tree and Random Forest are used to predict the number of likes and comments on an Instagram post from a university by using the post's topic, textual feature, and sentiment scores obtained from the sum of each word's scores in a dictionary of sentiment words, and TF-IDF feature extraction from the post's caption.