OPTIMIZATION OF NAÏVE BAYES ALGORITHM USING FORWARD SELECTION METHOD FOR CLASSIFICATION OF STUDENT LEARNING STYLES

TEGAR RAKASIWI
Program Studi Informatika, Fakultas Sains & Teknologi
Universitas Teknologi Yogyakarta
Jl. Ringroad Utara Jombor Sleman Yogyakarta
E-mail : 22tegaar.e@gmail.com

ABSTRACT

A learning style refers to an individual's preferred approach to receiving, processing, and conveying information. However, many students are unaware of the learning style that best suits their unique characteristics, which can lead to a less effective learning experience. This lack of awareness may result in low motivation, suboptimal learning outcomes, and a mismatch between teaching methods and students' needs. This study aims to develop a student learning style classification system using the Naïve Bayes algorithm. The system categorizes students into three learning styles: visual, auditory, and kinesthetic, based on responses to a questionnaire completed by the students. The questionnaire data, collected from 277 respondents, included 82 labeled as Visual, 75 as Auditory, and 120 as Kinesthetic. Feature selection was performed using the Sequential Forward Selection algorithm, and the data was then trained using the Categorical Naïve Bayes method to identify patterns within the dataset. The application was developed in Python, with the Django framework for the backend and MySQL for the database. The model achieved 89.29% accuracy in classifying students' learning styles. The system received an average rating of 82.75%, categorized as very good across functionality, user-friendliness, information quality, and user satisfaction. Therefore, this system is expected to assist students in adapting teaching methods to suit their learning characteristics.

Keywords: Learning styles, Naïve Bayes, Classification, Questionnaire, Django.