

ABSTRAK

Pemain belakang atau defender adalah bagian penting dari tim sepakbola agar tim musuh tidak bisa melakukan serangan ke gawang. Pemain belakang sendiri terdiri dari *left back*, *right back*, *center back*, *right wing back*, *left wing back*. Permasalahan yang sering terjadi adalah para pelatih di negara berkembang tidak bisa menempatkan pemain sesuai dengan kemampuan individunya. Dengan penempatan pemain yang tidak tepat maka formasi tim yang dibentuk menjadi kurang baik. Maka dari itu dilakukan penelitian untuk klasifikasi kategori pemain belakang menggunakan atribut *age*, *height*, *finishing*, *physical contact*, *defensive awareness*, *speed* dan *dribbling* dengan metode *Modified K-Nearest Neighbors*.

Metode *Modified K-Nearest Neighbors* adalah kembangan dari metode *K-Nearest Neighbors* konvensional dengan adanya penambahan proses perhitungan nilai Validitas dan perhitungan *Weight Voting*. Dari total keseluruhan dataset pemain belakang sepakbola yang berjumlah 896 data, dilakukan percobaan menggunakan variasi *Cross Validation 3-fold*, *5-fold*, dan *7-fold* dengan nilai $k = 1$ sampai dengan $k = 10$ untuk setiap percobaan *k-fold*. Tingkat akurasi rata-rata tertinggi yaitu sebesar 83,13% pada *5-fold* dengan nilai $k = 3$.

Kata Kunci : *Modified K-Nearest Neighbor*, Klasifikasi, Pemain Belakang, Sepakbola, *Smote*, *Cross Validation*

ABSTRACT

Defenders is an important part of a football team to prevent the opposing team from launching attacks on the goal. The defenders themselves consist of left back, right back, center back, right wing back, and left wing back. The problem that often occurs is that coaches in developing countries often struggle to position players according to their individual abilities. Improper player placement can result in a less effective team formation. Therefore, research has been conducted to classify the categories of back players using attributes such as age, height, finishing, physical contact, defensive awareness, speed, and dribbling, using the Modified K-Nearest Neighbors algorithm..

The Modified K-Nearest Neighbors algorithm is an enhancement of the conventional K-Nearest Neighbors algorithm, incorporating the calculation of validity value and Weight Voting. From a total of 896 data in the dataset of football defense players, experiments were conducted using various Cross Validation techniques, including 3-fold, 5-fold, and 7-fold, with values of k ranging from 1 to 10 for each k-fold experiment. The highest average accuracy rate was 83.13% in the 5-fold cross-validation with $k = 3$.

Keywords: Modified K-Nearest Neighbors, Classification, Defender, Football, Smote, Cross Validation.