

ABSTRACT

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PLAYER ROLE CLASSIFICATION AND HERO LINEUP RECOMMENDATIONS IN THE MOBILE LEGENDS: BANG BANG (MLBB) GAME USING THE RANDOM FOREST CLASSIFIER ALGORITHM WITH THE CRISP-DM (CROSS-INDUSTRY STANDARD PROCESS FOR DATA MINING) APPROACH

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Mobile Legends: Bang Bang (MLBB), released by Moonton in 2016, is a MOBA (Multiplayer Online Battle Arena) game that involves strategic combat between two teams of five players each. Each player in this game controls a hero with unique and specific abilities that are usually grouped into five main roles, namely explane, goldlane, jungler, midlane, and roamer, where each role has a different function and role in the team strategy. Proper role classification and selection of heroes that fit the role is crucial to victory, as it can affect team synergy and effectiveness in matches. This research aims to implement a machine learning (ML) algorithm, namely Random Forest Classifier, to analyze game data and classify player roles with high accuracy. In addition, this research also aims to provide recommendations for the optimal hero lineup based on the data collected, in order to improve the team's strategy and performance in the match. The data used in this research is taken from the official Mobile Legends Professional League (MPL) Indonesia website and YouTube channel in Season 13 Playoff Stage matches, which provide detailed information about team strategy and performance during matches. The data is processed using the CRISP-DM (Cross-Industry Standard Process for Data Mining) method, which includes six stages, including business understanding, data understanding, data preparation, modeling, evaluation, and deployment. The results show that the developed model has an accuracy of 91%, showing very high reliability in classifying player roles based on match data. In addition, this research also successfully produces hero line-up recommendations that can be optimized for the next match, providing data-based strategic insights to improve team performance in the future.

Bibliography (2021 - 2024)