Implementasi Algoritma *Extreme Gradient Boosting* untuk Klasifikasi Gaya Pembelajaran pada *Adaptive Hypermedia Learning Environment*

(Implementation of Extreme Gradient Boosting Algorithm for Learning Style Adaptive Hypermedia Learning Environment)

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ABSTRACT

E-Learning system platform is a solution to achieve learning objectives during the pandemic, but E-Learning is not suitable for student characteristics. Adaptive learning system is a solution by presenting content according to student characteristics. HLE platform can be an alternative flexible learning system with multimedia method so that users can adjust their needs. HLE with adaptive system can improve learning, but the development of adaptive HLE only measures students' self-monitoring ability. This research aims to develop VARK learning style classification in adaptive HLE using XGBoost. XGBoost is an algorithm built on a decision tree with a gradient boosting method that is robust and accurate on minimal datasets. Using 165 data, the model was trained and resulted in 92.68% accuracy, 93.52% precision and 92.86% recall. Testing the model on 10 test data shows the model can predict 9 out of 10 data. Integration the model in the apps using Laravel. *Black-Box testing shows the main features as expected and some points need adjustment.*

Key Words: *E-Learning, Adaptive,* HLE, *Artificial Intelligence,* XGBoost