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ABSTRACT

In the rapidly evolving digital marketing landscape, accurately predicting whether a user will click on an advertisement is crucial for maximizing advertising effectiveness and return on investment. This project aims to build a robust machine learning-based classification model to predict ad click behavior using user data such as age, daily time spent on site, daily internet usage, income, and gender. Various algorithms including Logistic Regression, Decision Tree, Random Forest, K-Nearest Neighbors, Gradient Boosting, and XGBoost were implemented and compared for performance. The model identifies key features influencing ad engagement and provides actionable insights for businesses to optimize their targeting strategies. The results show significant improvements in both click-through rates and advertising profitability, demonstrating the potential of data-driven decision-making in online advertising.

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