MODEL ML: AN AUTOMATED PLATFORM FOR PRECISE AND EFFICIENT MACHINE LEARNING MODEL DEVELOPMENT

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Abstract - In this paper, we introduce the "Model ML" platform, an innovative and automated solution with the primary objective of democratizing the development of machine learning models. This platform is tailored to benefit organizations and individuals who may not have direct affiliations with the machine learning and AI domain. It achieves this objective through the integration of multiple algorithms and the provision of an intuitive user interface. Machine learning (ML) and artificial intelligence (AI) have gained widespread use in diverse fields such as finance, marketing, and data analysis. However, the high cost of computing resources and the scarcity of expertise in data cleaning, feature selection, model selection, and hyper parameter optimization have hindered the adoption of machine-learning applications by novices, students, and small organizations. Although AutoML (Automated Machine Learning) platforms have emerged to simplify the process of developing machine learning models, their technical complexity and lack of user-friendly interfaces present a significant challenge for most users. This paper elucidates the strategies to surmount the mentioned difficulties by designing an automated platform for developing machine learning models, namely Model ML, as a web and mobile application. The proposed platform encompasses several salient attributes: user-friendly interfaces, dataset encoding, tailored model training, statistical analysis, and data visualization for personalized input data, instant model testing using user interfaces, streamlined workflows, and transparency. In addition, it incorporates a leaderboard function that facilitates the assessment of the algorithms utilized during training, as well as the option to export trained models in various formats and access pre-trained machine-learning models commonly employed in the field. As a result, individuals lacking extensive programming skills can construct precise and efficacious models with greater adaptability.

Keywords: *Algorithm Selection, Artificial Intelligence, AutoML, Hyper parameter Optimization, Machine Learning,*