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(57) Abstract :

In our childbirth project, we implement a decision tree algorithm to predict the mode of delivery: vaginal or via C-section. Functioning akin to flowcharts, this algorithm considers diverse factors such as maternal age, weight, height, prior pregnancies, and medical history. Learning from provided data, it discerns intricate patterns and connections between these factors and the childbirth mode. For instance, it might begin by assessing maternal age and then inquire about previous C-sections. Through iterative analysis, the decision tree reaches a prediction. This predictive analysis aims to equip healthcare providers with a reliable method to anticipate childbirth modes, thereby enabling better preparation and informed decision-making for safer deliveries. Moreover, we enhance our predictive model by integrating machine learning algorithms. These algorithms incorporate additional features such as the approximate delivery date, prediction of pre-eclampsia, assessment of maternity risks, and estimation of childbirth weight. By leveraging machine learning, our model becomes more robust and capable of providing comprehensive insights into various aspects of childbirth, ultimately contributing to improved maternal and neonatal healthcare outcomes.

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