Model Development for Child Developmental Milestone Assessment

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Abstract

This paper presents the implementation of models for assessing the developmental milestone of children below age five on physical, cognitive, social, and emotional factors, which is a crucial aspect of human development. To the best of our knowledge, we are the first to design and evaluate models assessing the developmental delays of Sri Lankan children. The primary goal of this study is to analyze the ability of children to reach the relevant milestones in their childhood using video recordings and parents feedback. Out of the different models we experimented with, we selected the best models in our final evaluation. As the principal contribution, we developed a model to decide whether the child has typical developmental growth or otherwise using parents feedback and obtained 92.31% accuracy. Furthermore, we achieved 92.76% for the social and emotion detection model and 88.44% accuracy for the child action recognition model using video-based datasets. In the future implementation, the derived models will be integrated to build a mobile application.

Keywords

Machine Learning, Child Developmental Milestone Assessment, Typical Development Growth, Child Social And Emotional Recognition, Child Action Recognition