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3DHBD: Synthetic 3D Dataset for Advanced StudentBehavior Analysis in Educational Environments

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Abstract—Student pose in classroom environment is challenging task due to complexity of student movements and interactions. Traditional methods for pose detection typically require substantial data collection efforts, including the downloading and labelling of classroom videos and images. These efforts are further complicated by privacy concerns and unavailability of specific datasets designed for educational settings. If you want to detect student pose there is no dataset is available on the internet. As there is great scarcity of the dataset in student pose detection, we propose a brand new synthetic dataset for student pose estimation. In response these challenges we introduce the 3D Humanix Blender Dataset or 3DHBD. It is a synthetic labelled dataset created for student pose detection. Utilizing Blender an open-source software for 3D modelling, accurately represents a diverse range of student poses within the educational context.This dataset not only addresses the ethical and privacy issues associated with data collection in actual classrooms but also provides a high-quality, versatile resource for training deep learning models in pose estimation. This paper presents a detailed comparison of the 3DHBD with other available datasets, demonstrating its superiority in facilitating accurate and effective student pose detection. 3DHBD is freely available on Kaggle, a platform owned by Google that hosts hundreds of datasets. This availability ensures that researchers and developers can access and utilize the dataset to advance pose detection technologies in educational environments.

Keywords— Pose Detection, 3D HUMANIX Blender Dataset 3DHBD, Blender, Kaggle,