

Enhancing Fall Detection Accuracy with a Transfer Learning-Aided Transformer Model Using Computer Vision

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Abstract : Falls are a significant health concern for older adults globally, and prompt identification is critical to providing necessary healthcare support. Our study proposes a new fall detection method using computer vision based on modern deep learning techniques. Our approach involves training a transformer model on a large 2D pose dataset for general action recognition, followed by transfer learning. Specifically, we freeze the first few layers of the trained transformer model and train only the last two layers for fall detection. Our experimental results demonstrate that our proposed method outperforms both classical machine learning and deep learning approaches in fall/non-fall classification. Overall, our study suggests that our proposed methodology could be a valuable tool for identifying falls.

Keywords : healthcare, fall detection, transformer, transfer learning

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