ABSTRACT

A VISION-BASED APPROACH ON FALL DETECTION USING A

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18/423120/PA/18203

Falls are a frequent, yet often neglected, source of injuries. One in every three persons over the age of 65, and half of those over the age of 80, will fall at least once a year. With elderly people being in the more vulnerable state against a fall that can sustain a stronger or even a fatal injury.

A method is needed to detect a fall for when an elderly people fell and in an unattended manner so that help could be sent their way and minimize their injury. A video-based approach is one way that a fall can be detected, on this thesis a human recognition activity was build using RNN-CNN method and trained on fall datasets to detect falls. This thesis will then conduct research on if a vision-based method is a more viable option of detecting falls compare to other methods of fall detection.

With this approach using the URfall dataset for training it achieved 42.86% accuracy and using the multiple camera fall dataset achieved an accuracy score 91.67%.

Keyword: *Computer Vision, Recurrent Neural Network, Convolution Neural Network, Fall.*