# Micro-movement magnification in video signals using complex wavelet analysis

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**Abstract**

Magnifying micro-movements from natural video has recently been investigated by several computer vision researchers, due to its impact in numerous applications. In this study, the authors analyse video signals and try to magnify micro-movements/vibrations to make them visible. These micro-movements are typically undetectable and cannot be seen by basic human vision. They utilise complex wavelets to analyse sequential frames and detect any minor change in object's spatial position. They magnify some specific complex wavelet frequency bands by a multiplication factor and reconstruct back the video signal after some manipulation and modification to make these micro-movements seen and observable. They compare their work with recent techniques in micro-motion magnification (Freeman et al .) and try to show the merits of each technique. These micro-movements can later be utilised in different applications such as medical imaging, structural engineering, mechanical engineering, physical feature analysis and industrial engineering, as will be seen in their experiments.

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