A significant number of action recognition research efforts use spatio-temporal interest point detectors for feature extraction. Although the extracted features provide useful information for recognizing actions, a significant number of them contain irrelevant motion and background clutter. In many cases, the extracted features are included "as is" in the classification pipeline, and sophisticated noise removal techniques are subsequently used to alleviate their effect on classification. We introduce a new action database, created from the Weizmann database, that reveals a significant weakness in systems based on popular cuboid descriptors. Experiments show that introducing complex backgrounds, stationary or dynamic, into the video causes a significant degradation in recognition performance. Moreover, this degradation cannot be fixed by fine-tuning the system or selecting better interest points. Instead, we show that the problem lies at the descriptor level and must be addressed by modifying descriptors.

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The public is welcome to attend.