Motivation

- The successes of gesture recognition have been limited to the use of RGB images captured by video cameras.
- Depth information has long been regarded as an essential part of successful gesture recognition.
- The Kinect camera provides depth information through collecting a sequence of depth images for human gestures.

Proposed Approach

- **Preprocessing:**
  - Background removal – Otsu’s method
  - Smoothing – median filter

- **3D Gesture Representation:**
  - 2D motion trail model (2D-MTM)
  - 3D motion trail model (3D-MTM)

- **Feature Extraction and Classification:**
  - HOG, HOF and multimodal information
  - Maximum Correlation Coefficient and SVM

Experiments and Results

- **Dataset:**
  - Chalearn gesture dataset

- **Results:**
  - The proposed approach achieves 21.74% average error rate.
  - The 3D-MTM can be effectively adopted for gesture recognition.