

# Temporal Action Localization in Untrimmed Videos

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## Goal

Localization of actions, events, and activities in long, untrimmed videos.

## Motivation

Real applications usually involve long, untrimmed videos, which can have highly unconstrained background scenes or irrelevant activities, and one video can contain multiple instances. Localizing actions and activities in long videos can save tremendous time and computational costs.

## Problems to address

- 1) Determine whether a video contains specific actions or activities (such as diving, jump, etc.).
- 2) Identify temporal boundaries (start time and end time) of each action or activity instance.

### Project Page:

<http://www.ee.columbia.edu/ln/dvmm/researchProjects/cdc/>

**CDC Networks Demo**  
Yizhou Wang, Zheng Shou, and Shih-Fu Chang

**Video Player**

**Action Detection Results**

**Control Panel: Parameter Settings**

- Number of Thumbnails
- Frame Playing Speed
- Confidence Score Threshold
- Only Show Ground Truth

**Video Snippets:** Each thumbnail represents a video segment. The color of the bar represents the action class of the video segment.

CDC Per-frame Prediction (top-3):  
HighJump: 0.369  
LongJump: 0.167  
ThrowDiscus: 0.095

Further Refined by Temporal Localization:  
HighJump: 0.855

Ground Truth

CDC Results

### Option 1: Upload Video

Upload Video THUMOS Test Dataset

Option 1: Upload video

Delete Upload Pick Video

### Option 2: Select from THUMOS Dataset

Upload Video THUMOS Test Dataset

Option 2: Select from THUMOS Video Dataset

video_test_0001195.mp4 Length: 0:14:59	video_test_0001446.mp4 Length: 0:04:45
video_test_0001159.mp4 Length: 0:10:03	video_test_0000444.mp4 Length: 0:02:37
video_test_0001098.mp4 Length: 0:02:46	video_test_0000896.mp4 Length: 0:03:46
video_test_0001008.mp4 Length: 0:01:39	video_test_0001207.mp4 Length: 0:18:23
video_test_0001391.mp4 Length: 0:05:10	video_test_0001314.mp4 Length: 0:05:44
video_test_0000864.mp4 Length: 0:03:15	video_test_0001209.mp4 Length: 0:05:51
video_test_0001255.mp4 Length: 0:21:03	video_test_0001040.mp4 Length: 0:02:57
video_test_0000887.mp4	video_test_0001532.mp4

## How does the demo work?

