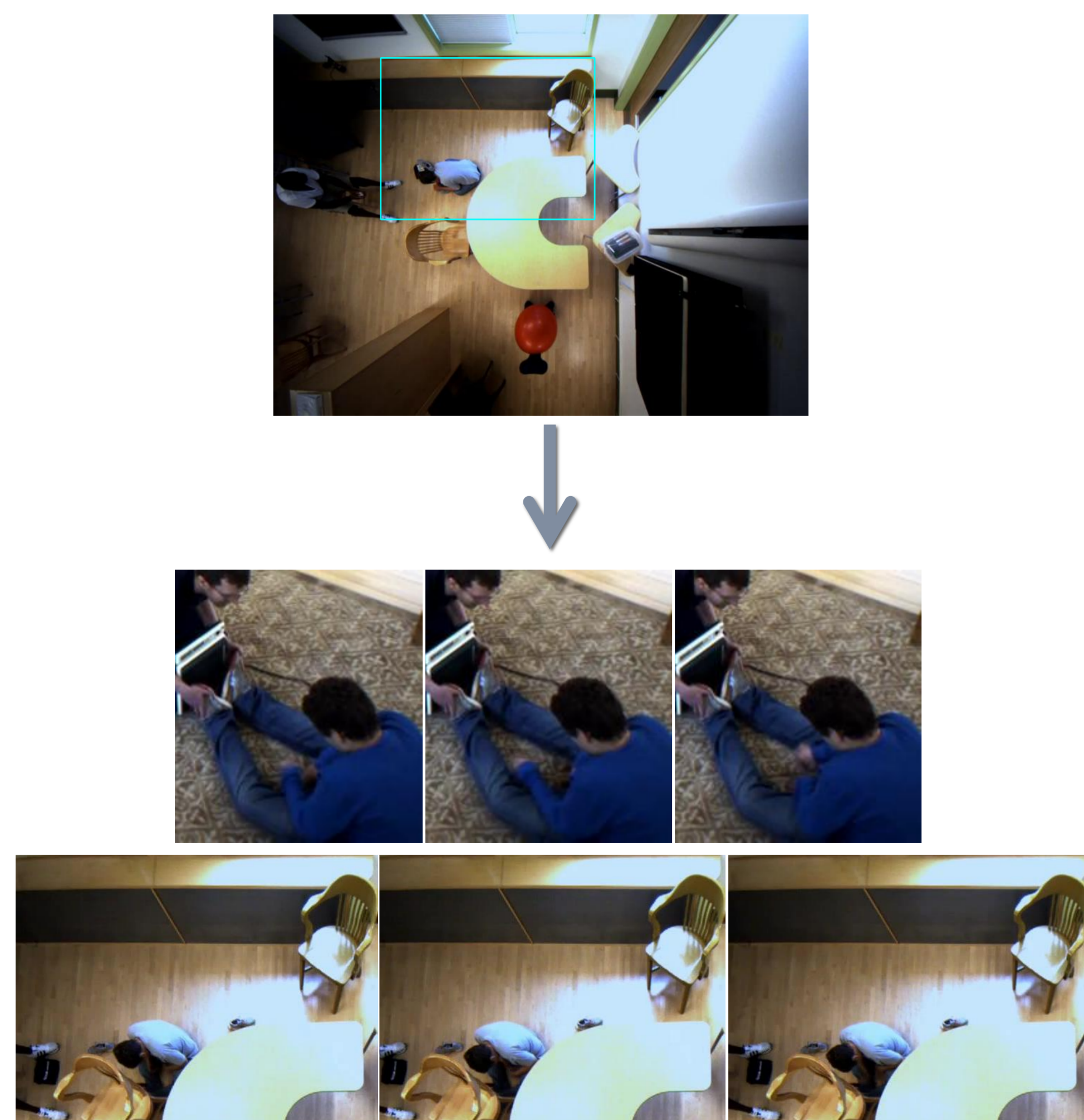


Motivation

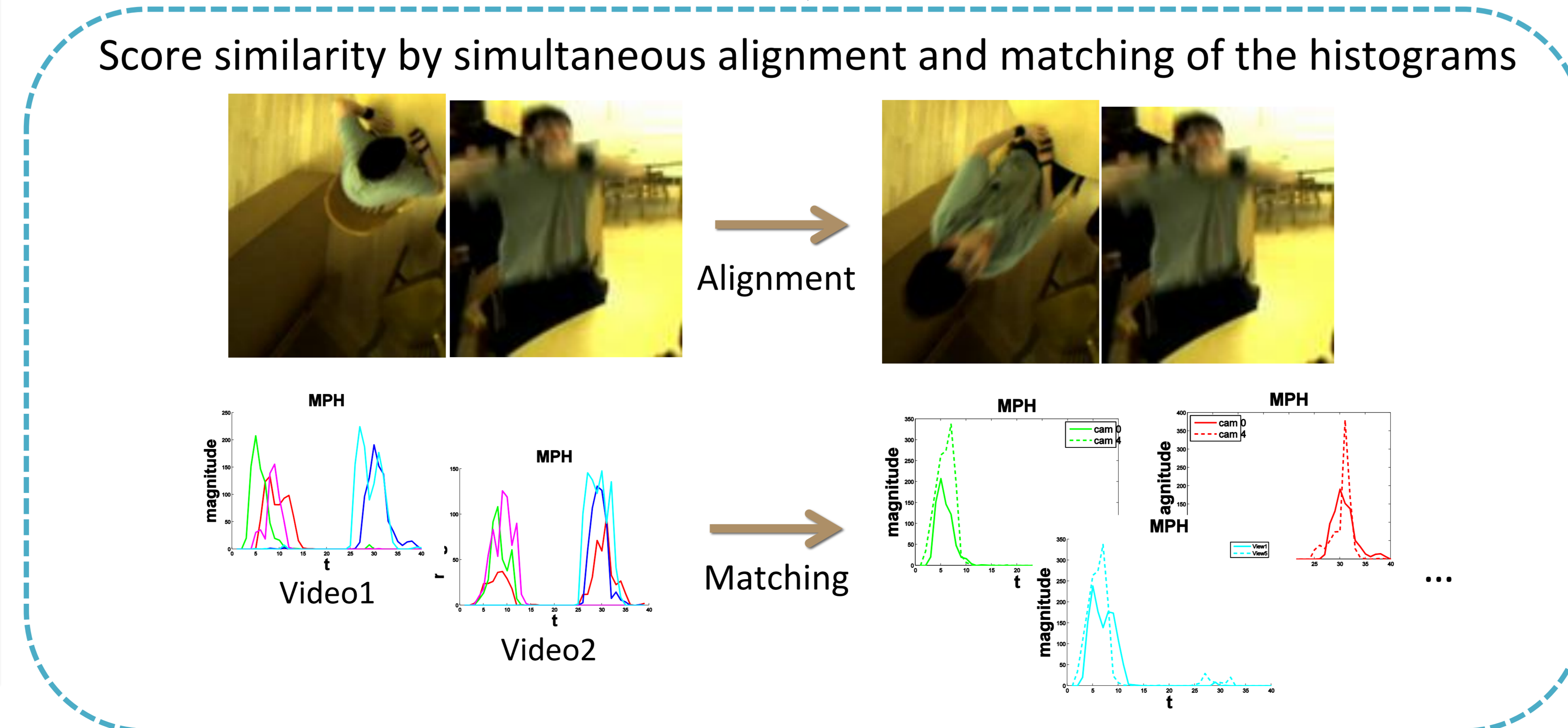
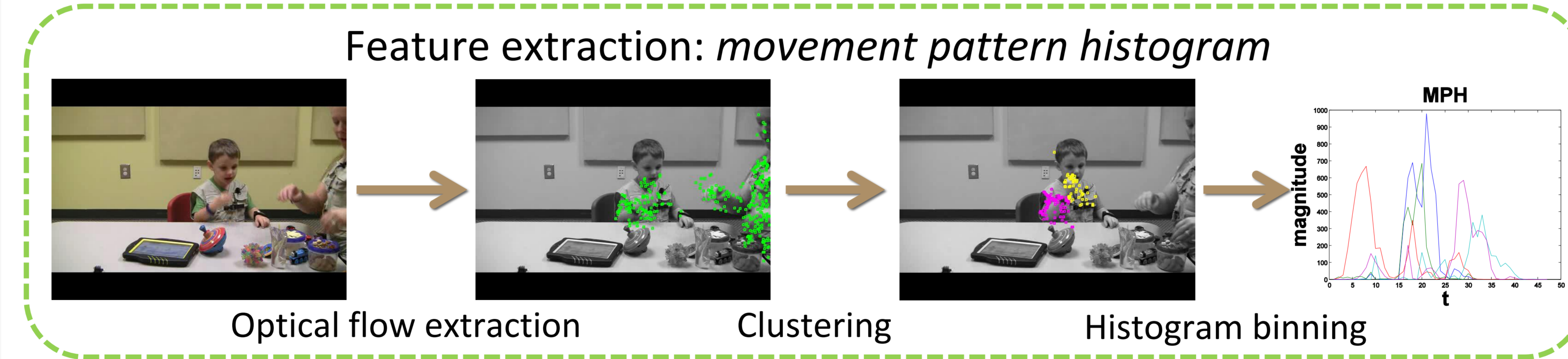
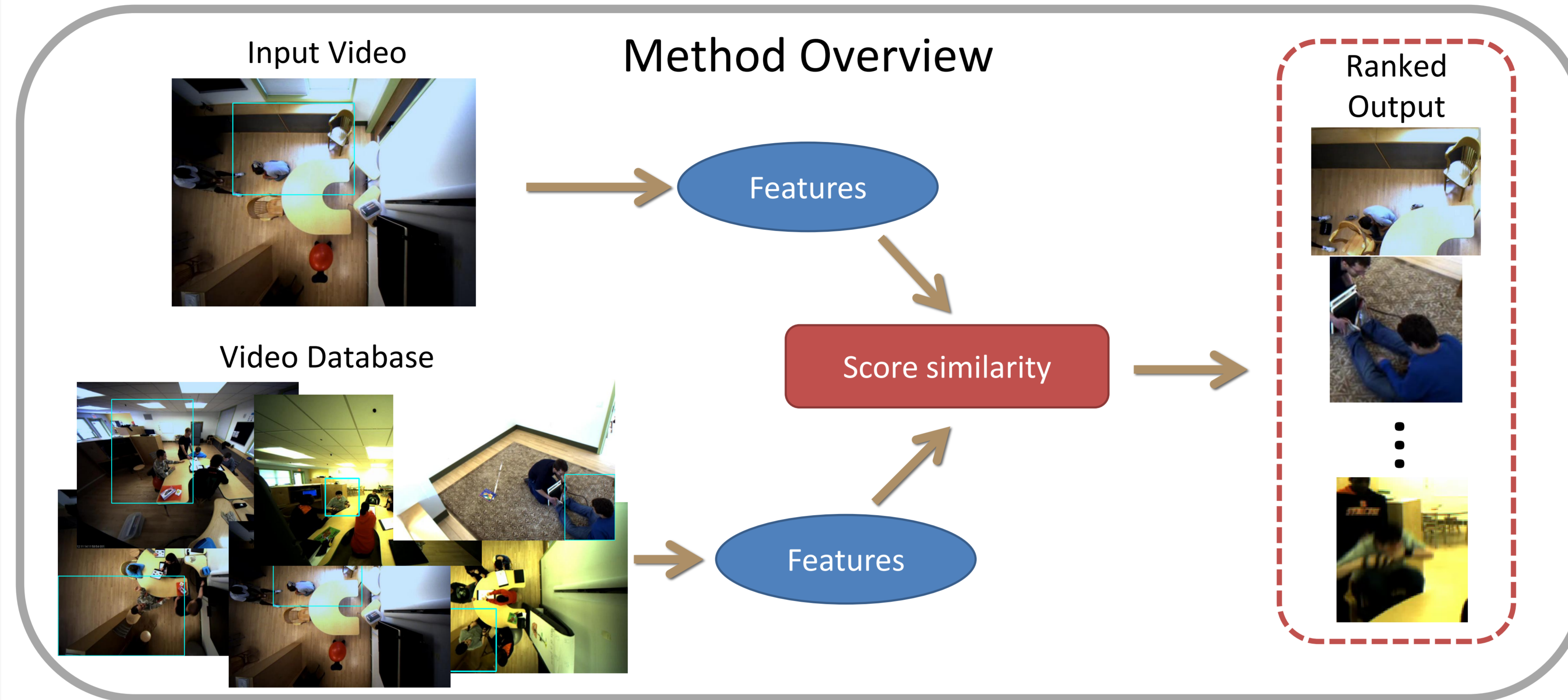
- Collecting large corpora of video data has become common practice among researchers and clinicians studying autism.
- Many individuals with autism exhibit stereotypies and other repetitive behaviors
- Manually identifying relevant behaviors in a large video collection is a labor-intensive process.

Goal

Make it easier to find relevant behaviors in video collections, by means of a tool that can automatically retrieve gross motor movements given a single video example identified by the user.

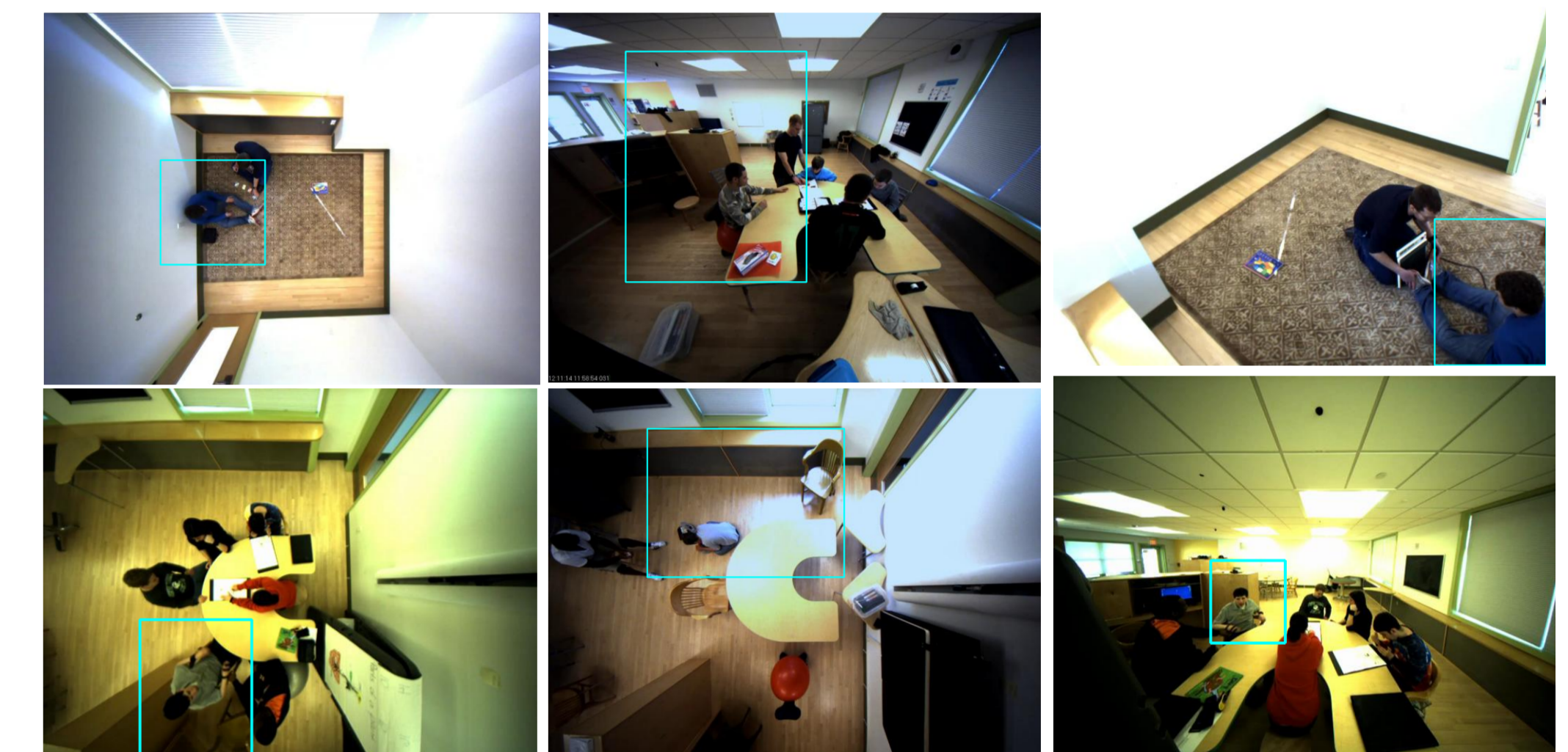


Overall Approach



Results Dataset

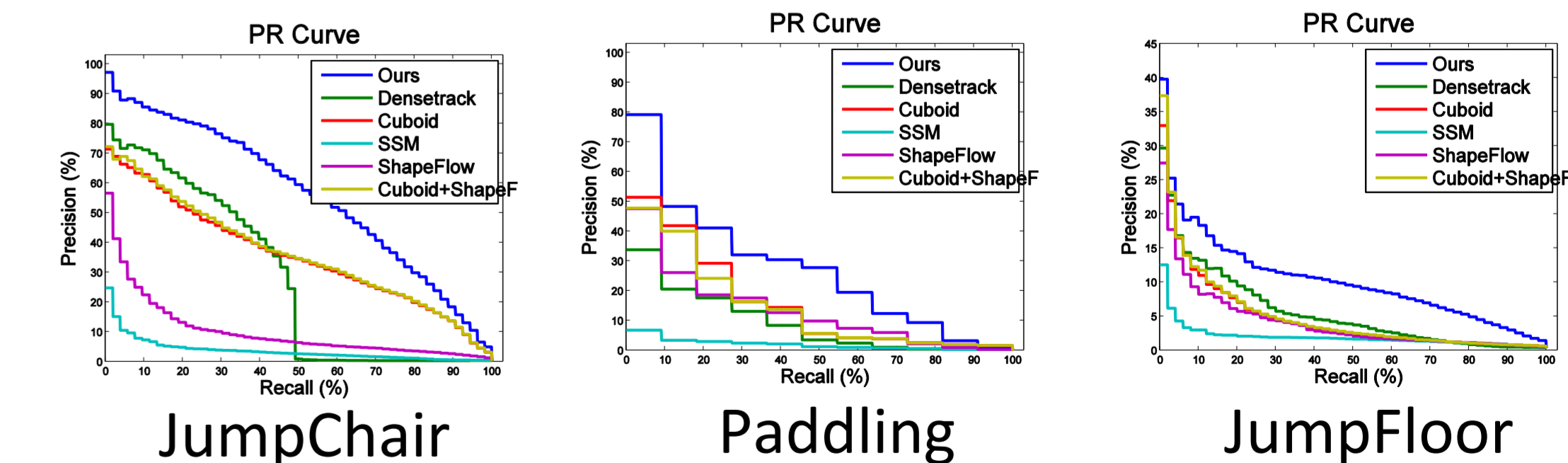
- A collection of 10-20 minute long videos with various viewing angles and background (total length ~2 hours) captured at Center for Discovery in Harris, NY.
- Three stereotyped/repetitive behaviors: jump while sitting (54 instances), paddling on the floor (12 instances), jump on floor (51 instances).



	Results			JumpChair Example 90% @ 3
	@10	@5	@3	
JumpChair	100%	95%	90%	90% @ 3
Slap	100%	91%	82%	10% @ 3
JumpFloor	86%	80%	60%	97%

The algorithm ranks **all input windows**. The top 3% (@3) contain 90% of the JumpChair behaviors (**detected** JumpChair windows), the bottom 97% contains the other 10% of **missed** JumpChair windows

Precision-Recall



Future Work

- We plan to improve the performance of our algorithm in several ways: better visual features which are more responsive to human movement, incorporate other modalities (speech, EDA), faster search time (currently linear time) and use human tracking to automatically identify subject of interest.
- We will conduct a more thorough experimental evaluation.