

A. Qualitative Results

The qualitative examples of proposals generated by BC-GNN on validation set of ActivityNet-1.3 are shown in Figure 1, and examples on testing set of THUMOS-14 are shown in Figure 2. These proposals are highly overlapping with the ground-truth action instances with the help of boundary content graph.

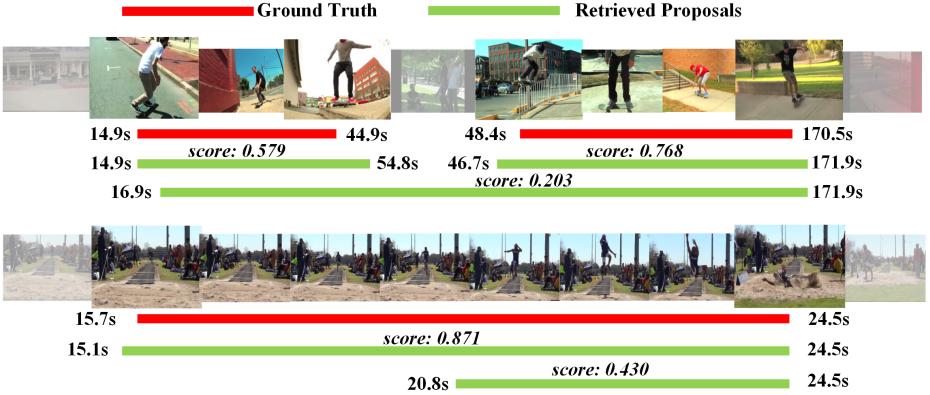


Figure 1: Qualitative results on ActivityNet-1.3 dataset.

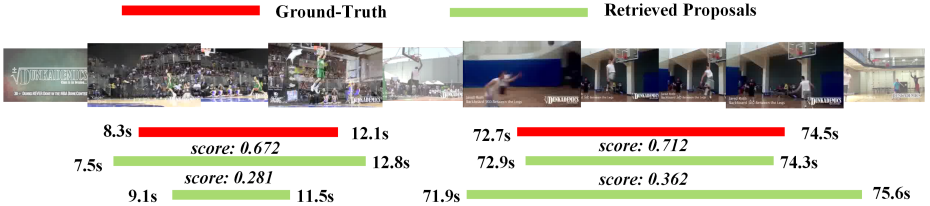


Figure 2: Qualitative results on THUMOS-14 dataset.

B. Detailed Design of BC-GNN

The design of convolutional layers in Base Module and Graph Construction Module(GCM) are shown in Table 1, and the design of trainable parameters in Graph Reasoning Module (GRM) are shown in Table 2.

Table 1: Detail of convolutional layers.

layer	kernel	stride	output dim	activation function
Base Module				
$conv1d_1$	3	1	512	ReLU
$conv1d_2$	3	1	512	ReLU
Graph Construction Module (GCM)				
$conv1d_s$	3	1	256	ReLU
$conv1d_e$	3	1	256	ReLU
$conv1d_c$	3	1	256	ReLU

Table 2: Detail of trainable matrices/vectors.

parameter	input dim	output dim	activation function
Graph Construction Module (GCM)			
fc_1	4096	256	ReLU
Graph Reasoning Module (GRM)			
θ_{s2e}	256	256	ReLU
θ_{e2s}	256	256	ReLU
θ_{start}	256	256	ReLU
θ_{end}	256	256	ReLU
Output Module			
θ_{SO}	256	1	Sigmoid
θ_{EO}	256	1	Sigmoid
θ_{CO}	256	1	Sigmoid